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1897.

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SUMMARY OF THE REPORTS  
OF THE  
DISTRICT MEDICAL OFFICERS OF HEALTH  
IN THE  
ADMINISTRATIVE COUNTY OF ESSEX,  
For the Year 1896.

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PREPARED FOR THE COUNTY COUNCIL  
BY  
JOHN C. THRESH, D.Sc., M.D., B.Ch., D.P.H.,  
*Fellow of the Institute of Chemistry;*  
*Member of the Society of Public Analysts, etc., etc.*

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Presented to the SANITARY COMMITTEE,  
JUNE, 1897.

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Chelmsford:  
PRINTED BY JOHN DUTTON, 8, TINDAL STREET.

## N O T I C E .

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The Chemical and Bacteriological Laboratory, under the charge of the County Medical Officer of Health, is fully equipped for the examination of samples of water, of sewage and sewage effluents, the examination of sputa (for tubercle bacilli), of exudations from the throat (for Diphtheria bacilli), of blood serum (for diagnosis of Typhoid Fever), of hair (for Ringworm), etc.

The necessary appliances for taking and forwarding samples are sent upon application by letter or telegram addressed to Dr. Thresh, Chelmsford.

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Table B. Table of Populations, Births, and of new cases of Infectious Sickness coming to the knowledge of the Medical Officers of Health during the year 1896, classified according to Diseases, Ages, and Localities.

## SECTION I.

### CHANGES IN THE ADMINISTRATIVE COUNTY.

During the year two new Urban Districts have been formed, increasing the number of Urban Authorities in the County from 24 to 26. The Epping Urban District comprises the whole of the Epping Special Drainage Area, and the Brightlingsea Urban District, the whole of the parish of Brightlingsea.

### POPULATION OF THE COUNTY.

According to the statistics of the Medical Officers of Health (vide Table VII.) the population in the middle of 1896 was as under :—

Population of 26 Urban Districts	...	416,809
," 17 Rural ,,	...	257,341
Total ...	...	674,150

This gives an increase of 34,608 for the year, and of 97,749 for the 5½ years which had elapsed since the last Census enumeration.

### THE COUNTY BIRTH-RATE.

The gradual decline in the Birth-rate still continues, the fluctuations following closely those for England and Wales. For the year the County-rate was 1·4 below that for the whole country.

## BIRTH - RATES.

TABLE I.

		Birth-rates, 1896, per 1,000 population.	Birth-rates, 1895, per 1,000 population.	Mean Birth-rate for the 5 years, 1890-1894 per 1,000 population.
In Rural Districts	..	25·4	26·1	27·0
In Urban Districts	..	30·1	31·2	31·62
The Administrative County		28·3	29·1	29·56
England and Wales	..	29·7	30·3	30·5

In Tables VII. and VIII. will be found the Rates for each Rural and Urban District. Speaking generally, the highest rates prevail in the rapidly increasing districts with large working class populations, and the lowest in the thinly populated Rural Districts, and the residential Urban Districts.

## THE COUNTY DEATH-RATE.

The death-rate in 1896 was lower than in any year on record, excepting 1894 and is 1·9 below the mean for the previous five years. In the Rural Districts, the death-rate has been higher than in the Urban, and whilst the former is 1·4 below the mean for the five years 1890-4, the latter is 2·3 below. As compared with England and Wales the result is strikingly favourable, being 3·4 per 1,000 population less. The highest death-rate was recorded in the town of Braintree, where it reached 18·8 per 1,000 population, but this is exceptional, the rate for that district only averaging about 16. In the Shoeburyness, Wanstead and Woodford Urban Districts the rate was below 10· per 1,000 population. *Vide* Tables VII. and VIII.

## DEATH-RATES FROM ALL CAUSES PER 1,000 POPULATION.

TABLE II.

Death-Rates.	1896.	1895.	Mean for 5 years 1890-1894.
Whole of Rural Districts ..	14·4	15·6	15·8
Whole of Urban Districts ..	13·2	17·9	15·5
Administrative County ..	13·7	17·0	15·6
England and Wales ..	17·1	18·7	18·9

## INFANTILE MORTALITY.

The mortality amongst children under one year of age has been about the average of the past seven years, and is much below the rate for the whole of England and Wales. The proportion of deaths under one year to births is always much lower in the Rural Districts than in the towns, and in the larger towns, with a large working class population, the proportion is highest. The subject is referred to in several reports, the general opinion being that parental ignorance rather than wilful negligence is the cause. More children in the towns are fed artificially by means of feeding bottles, and to the want of thorough cleanliness, and the use of improper food materials, much of this infantile mortality is due. Until this ignorance is dispelled by the instruction of children (girls more especially) in the higher standards of our Elementary Schools, in the simple laws for the preservation of health, we cannot look for any marked diminution in the mortality amongst infants and young children.

## INFANTILE MORTALITY.

TABLE III.

Deaths of Infants under one year of age per 1,000 births.

	Rural Districts.	Urban Districts.	County.	England and Wales.
1896	103·	136	124	148
1895	108·	148	133	161
1894	97·5	117	109	137
1893	99·	136	122	159
1892	97·	139	128	148
1891	99·5	122	113	149
1890	107·5	143	127	151
Average for 7 years	102·	134·5	122	150

## DEATHS FROM ZYMOtic DISEASES.

The total deaths registered during the year from the seven principal Zymotic diseases are as under :—

TABLE IV.

	Urban Districts.	Rural Districts.	Total.
Small Pox	...	0	0
Scarlet Fever	...	35	17
Diphtheria and Croup	...	160	86
Fevers	...	104	32
Measles	...	147	64
Whooping Cough	...	169	79
Diarrhoea	...	315	72
	930	350	1280

The deaths during the previous year from the same causes were, in the Urban Districts, 1,074, in the Rural Districts, 390, total 1,464. There was a slightly increased mortality from

Fevers and Scarlet Fever, whilst Whooping Cough was much more fatal. Diphtheria, Measles and Diarrhoea on the other hand, caused a much smaller mortality.

The following Table (V.) gives the death-rates from the above-mentioned infectious diseases, for the Urban and Rural Districts, the County and England and Wales respectively.

DEATH-RATES FROM THE SEVEN PRINCIPAL ZYMOtic DISEASES  
PER 1,000 POPULATION.

TABLE V.

	1896.	1895.	1894.	1893.	1892.	1891.	1890.
In the Urban Districts ..	2.25	2.84	1.89	2.82	2.80	1.74	2.57
In the Rural Districts ..	1.34	1.51	1.35	1.93	1.15	1.32	1.45
In the Administrative County .. ..	1.89	2.31	1.64	2.43	2.17	1.55	2.04
In England and Wales ..	2.18	2.14	1.76	2.47	1.92	1.83	2.03

In the next Table (VI.) the death-rates from the seven principal Zymotic diseases are given per 1,000 population, and the corresponding rates for England and Wales are added for comparative purposes. The most interesting feature is the decrease in the mortality from Diphtheria, which will be specially referred to in the section devoted to that disease. In every instance, the mortality in the Urban Districts is higher than in the Rural, the higher death-rate from Diarrhoea being very marked.

Taken as a whole, the County mortality statistics compare very favourably with those for England and Wales, and when we have succeeded in reducing the mortality from such diseases as Diphtheria, Typhoid Fever and Diarrhoea, the County will rank as one of the healthiest in England.

DEATH-RATES PER 1,000 POPULATION FROM THE SEVEN PRINCIPAL ZYMOtic DISEASES.

TABLE VI.

		Small-pox.	Scarlet Fever.	Diphtheria and Croup.	Fever.	Measles.	Whooping Cough.	Diarrhea.	Total.
Rural Districts	..	·0	·06	·33	·12	·25	·30	·28	1·34
Urban Districts	..	·0	·09	·38	·25	·35	·41	·76	2·24
Administrative County		·0	·08	·36	·20	·31	·37	·57	1·89
England and Wales	..	·02	·18	·28	·17	·56	·41	·56	2·18

Tables VII. and VIII. are prepared from the returns of the Medical Officers of Health. The corrected death-rate for Grays would be higher than the uncorrected rate, since the correction would include the deaths of paupers belonging to Grays in the Union House. According to the report of the Medical Officer of Health for Orsett Rural District, seven pauper deaths should be credited to Grays, this would increase the Grays death-rate to 14·4. The Tables give the birth-rates, infantile mortality, corrected and uncorrected death-rates from all causes, the death-rates from the seven principal Zymotic Diseases and from Phthisis, together with the names of the Medical Officer of Health and the population of each district.

## BIRTH-RATES AND DEATH-RATES.

TABLE VII.

URBAN DISTRICTS.	Birth-rate.	Infantile Mortality.	Death-rates from				Medical Officer of Health.	Esti-mated Population.
			All Causes.	Seven principal Zymotic Diseases.	Uncorrected.	Cor-rected.		
1 Barking ..	..	42.3	1.49	17.15	15.15	1.8	C. F. Fenton, L.R.C.P., M.R.C.S.	16,500
2 Braintree ..	..	27.0	1.37	18.8	17.2	1.3	P. Stevens, L.R.C.P., M.R.C.S.	5,400
3 Brightlingsea ..	..	32.3	..	13.4	..	..	H. Cooper, M.R.C.S., L.R.C.P.	4,181
4 Buckhurst Hill ..	..	25.3	81	12.73	13.1	2.7	A. Ambrose, M.D., D.P.H.	4,870
5 Clacton ..	..	35.6	122	14.8	18.5	2.3	J. W. Cook, M.D.	5,000
6 Chelmsford ..	..	25.3	118	13.76	15.7	2.56	H. W. Newton, L.R.C.P., M.R.C.S., D.P.H.	11,700
7 Chingford ..	..	25.2	93	11.1	10.8	2.05	T. S. Taylor, M.D., M.R.C.S.	3,412
8 Colchester ..	..	25.7	132	13.0	13.3	9	G. Brown, M.D.	39,093
9 East Ham ..	..	36.6	148	13.2	12.8	2.4	A. W. Beaumont, L.R.C.S.	55,000
10 Epping ..	..	30.7	103	11.6	14.2	2.3	T. Fowler, L.R.C.P., L.R.C.S.I., D.P.H.	3,418
11 Grays ..	..	32.0	141	..	13.9	2.0	S. H. Snell, M.D., D.P.H.	13,500
12 Halstead ..	..	23.0	174	16.6	19.3	4.0	C. G. Roberts, M.B.	6,200
13 Harwich ..	..	38.1	13.4	14.9	14.2	7	H. Gurney, L.R.C.P., L.R.C.S.	8,603
14 Ilford ..	..	27.5	12.3	10.11	26.8	1.0	J. Shimeld, L.R.C.P., L.R.C.S.	18,000
15 Leyton ..	..	30.8	138	11.8	17.3	2.6	A. F. Peskett, M.R.C.S.	77,000
16 Maidon ..	..	24.8	100	15.4	20.0	2.6	E. P. Gutteridge, M.R.C.S.	5,638
17 Romford ..	..	35.8	121	12.5	16.9	2.0	A. Wright, M.R.C.S.	9,200
18 Saffron Walden ..	..	22.2	95	13.7	18.2	1.9	W. Armitstead, M.B.	6,126
19 Shoebury ..	..	34.8	106	9.9	10.6	2.7	E. W. Walter, M.R.C.S.	4,042
20 Southend ..	..	27.0	147	15.7	16.8	2.9	A. C. Waters, M.B.	17,529
21 Waltham Holy Cross ..	..	26.2	122	10.6	10.2	6	J. D. Priest, M.R.C.S., D.P.H.	6,350
22 Walthamstow ..	..	32.3	128	12.5	11.8	2.4	J. St. C. B. Shadwell, M.D., D.P.H.	65,000
23 Wanstead ..	..	18.1	97	9.6	9.6	1.1	F. Argies, M.R.C.P., Ed., M.R.C.S.	7,150
24 Witham ..	..	23.6	179	15.7	16.3	9	W. G. Gimson, M.D.	3,300
25 Woodford ..	..	24.6	111	9.9	9.0	1.1	W. G. Groves, M.R.C.S.	13,061
26 Walton-on-the-Naze ..	..	21.5	28	15.9	19.6	8.0	J. W. Cook, M.D.	1,026

TABLE VIII.

RURAL DISTRICTS.	Birth-rate.	Infantile Mortality.	Death-rates from				Medical Officer of Health.	ESTIMATED POPULATION.
			All Causes.	Cor- rected.	Uncor- rected.	Seven principal Zymotic Diseases.		
1 Belchamp	..	19.7	19.4	16.0	14.8	.7	.8	5,722
2 Billericay	..	27.3	89.17	14.5	25.2	1.3	.6	20,574
3 Braintree	..	20.5	101.	13.7	14.4	.9	.7	19,734
4 Bumpstead	..	21.4	32.	11.7	10.3	.7	1.0	2,886
5 Chelmsford	..	24.4	88.	13.0	12.1	1.5	.7	23,400
6 Dunmow	..	21.5	78.	16.2	..	1.3	.7	16,674
7 Epping	..	24.7	94.	13.4	13.4	1.6	.9	16,598
8 Halstead, No. 1	..	20.8	58.	10.7	9.9	1.0	.2	4,943
9 Halstead, No. 2	..	24.4	121.	15.3	12.4	1.3	.9	6,048
10 Lexden and Winstree	..	25.6	72.	13.2	13.2	.9	1.2	23,070
11 Maldon	..	27.4	11.0	14.3	13.2	1.1	.5	18,200
12 Ongar	..	25.4	100.	14.0	14.0	1.2	.6	10,557
13 Orsett	..	30.3	122.	13.1	13.1	1.9	.7	15,649
14 Rochford	..	32.4	122.	16.1	16.8	2.0	.9	15,114
15 Romford	..	30.5	153.	13.1	13.1	2.4	.8	17,100
16 Saffron Walden	..	23.3	113.	15.2	13.4	2.4	.7	12,458
17 Stanstead	..	22.5	118.	..	14.3	1.1	..	6,908
18 Tendring	..	26.1	78.	12.5	12.9	.6	1.0	25,897

## SECTION II.

### PREVALENCE OF ZYMOTIC DISEASES.

The Infectious Diseases Notification Act has been adopted by every Sanitary Authority in the County, so that the returns are quite complete, save for one Urban District, Brightlingsea. For nine months the notifications are included in the Tendring Rural District. In October the parish became an Urban District and as the Notification Act could not be adopted until January, 1897, there are no returns for the last three months of the year.

In Table IX. the number of cases of each disease notified is given. The decrease under the head of Diphtheria would be promising were it not that the next column shows that Typhoid Fever is increasing. The increase since 1890 has been rapid and practically continuous.

**TABLE IX.**  
TOTAL NUMBER OF CASES OF INFECTIOUS DISEASES  
NOTIFIED, 1890—1896.

	Small Pox.	Scarlet Fever.	Diphtheria and Croup.	Fever—Typhoid and Continued.	Puerperal Fever.	Erysipelas.	Total.
1896	19	2931	1437	888	43	733	6046
1895	63	2482	1738	712	26	661	5682
1894	420	2511	1619	648	37	785	6020
1893	235	3952	2009	776	61	1100	8133
1892	33	3013	1613	490	24	797	5970
1891	11	1402	1257	400	27	413	5310

In the Urban Districts the number of cases of Infectious Diseases notified per 1,000 population was 10·5 and in the Rural Districts 8·0, the means for the previous five years being 11·6 and 9·2 respectively. Both therefore are below the average.

The mean Zymotic case-rate was exceeded in the following Urban districts :—

Grays	...	...	11·1 per 1,000 population.
Walton	...	...	11·0
Walthamstow	...	...	11·8
Leyton	...	...	13·0
Ilford	...	...	13·6
Romford	...	...	15·1
Southend	...	...	15·1
Clacton	...	...	19·2

The excessive rates in our watering places is no doubt chiefly, if not entirely, attributable to the great facilities afforded for the introduction of disease from without. Convalescents only too frequently visit these places to regain strength, before they are entirely free from infection.

Exceptionally low rates are recorded in Harwich and Waltham Holy Cross. In the Rural districts the mean case-rate was exceeded in the following :—

Bumpstead	...	8·3
Rochford	...	9·3
Epping	...	9·5
Romford	...	12·1
Belchamp	...	13·0
Orsett	...	13·5

In Table X. is given the number of cases of Infectious Disease notified in each district, together with the names of the Diseases which have been most prevalent in order of frequency.

DISTRIBUTION THROUGHOUT THE COUNTY OF ZYMOTIC  
DISEASES GENERALLY.

TABLE X.

		No. of Cases Notified	No. per 1,000 inhabitants.	Diseases most prevalent.
<b>Urban Districts.</b>				
Barking	.. ..	160	9·7	Scarlatina and Diphtheria
Braintree	.. ..	36	6·6	Scarlatina
Brightlingsea	.. ..	—	—	
Buckhurst Hill	.. ..	29	6·0	Diphtheria and Scarlatina
Clacton	.. ..	96	19·2	Scarlatina and Diphtheria
Chelmsford	.. ..	101	8·6	Diphtheria & Typhoid Fever
Chingford	.. ..	13	3·8	Typhoid Fever
Colchester	.. ..	268	6·8	Scarlatina, Erysipelas and Diphtheria
East Ham	.. ..	541	9·8	Scarlatina, Diphtheria and Typhoid Fever
Epping	.. ..	26	7·5	Scarlatina
Grays	.. ..	150	11·1	Diphtheria and Scarlatina
Halstead	.. ..	60	9·7	Scarlatina and Typhoid
Harwich	.. ..	17	2·0	Scarlatina
Ilford	.. ..	285	13·6	Scarlatina and Diphtheria
Leyton	.. ..	1025	13·0	" " "
Maldon	.. ..	38	6·7	" " "
Romford	.. ..	139	15·1	Scarlatina, Diphtheria and Typhoid Fever
Saffron Walden	.. ..	24	4·0	Erysipelas
Shoebury	.. ..	64	15·8	Typhoid Fever and Scarlatina
Southend	.. ..	266	15·1	Scarlatina, Typhoid Fever and Diphtheria
Waltham Holy Cross	.. ..	11	1·7	Erysipelas
Walthamstow	.. ..	767	11·8	Scarlatina, Typhoid Fever and Diphtheria
Wanstead	.. ..	68	9·1	Diphtheria and Scarlatina
Witham	.. ..	17	5·1	Scarlatina
Woodford	.. ..	129	10·0	Scarlatina and Typhoid Fever
Walton-on-the-Naze	.. ..	18	11·0	Diphtheria
<b>Rural Districts.</b>				
Belchamp	.. ..	74	13·0	Scarlatina
Billericay	.. ..	136	6·8	Scarlatina, Diphtheria and Typhoid Fever
Braintree	.. ..	115	5·8	Scarlatina and Diphtheria
Bumpstead	.. ..	24	8·3	Diphtheria and Erysipelas
Chelmsford	.. ..	103	4·4	Scarlatina, Diphtheria and Typhoid Fever
Dunmow	.. ..	91	5·4	Ditto
Epping	.. ..	159	9·5	Scarlatina and Diphtheria
Halstead, I.	.. ..	8	1·6	Scarlatina and Erysipelas
Halstead, II.	.. ..	22	3·6	Diphtheria
Lexden and Winstree	.. ..	99	4·2	Scarlatina, Erysipelas and Diphtheria

TABLE X.—*continued.*

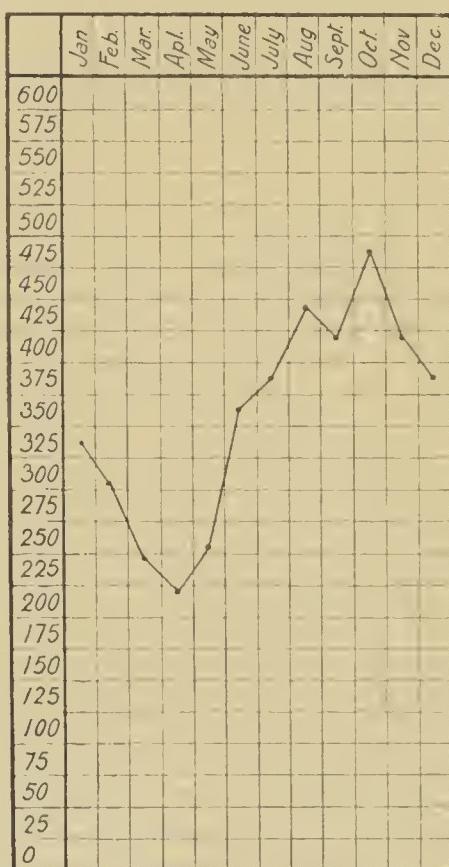
URBAN DISTRICTS <i>continued.</i>		No. of Cases notified.	No. per 1,000 in- habitants.	Diseases most prevalent.
Maldon	..	70	3·8	Scarlatina, Typhoid Fever and Diphtheria
Ongar	..	73	7·0	Diphtheria and Scarlatina
Orsett	..	212	13·5	Scarlatina, Diphtheria and Erysipelas
Rochford	..	141	9·3	Typhoid Fever and Scarlatina
Romford	..	208	12·1	Scarlatina, Diphtheria and Typhoid Fever
Saffron Walden	..	62	5·0	Scarlatina and Erysipelas
Stanstead	..	38—	5·8	
Tendring	..	95	3·6	Scarlatina, Diphtheria and Erysipelas

The seasonal distribution of all the notifiable diseases is graphically represented on the subjoined Charts.

CHART I.

## URBAN DISTRICTS

## SEASONAL PREVALENCE OF ALL NOTIFIABLE DISEASES



## CHART II.

## RURAL DISTRICTS

SEASONAL PREVALENCE OF ALL NOTIFIABLE DISEASES

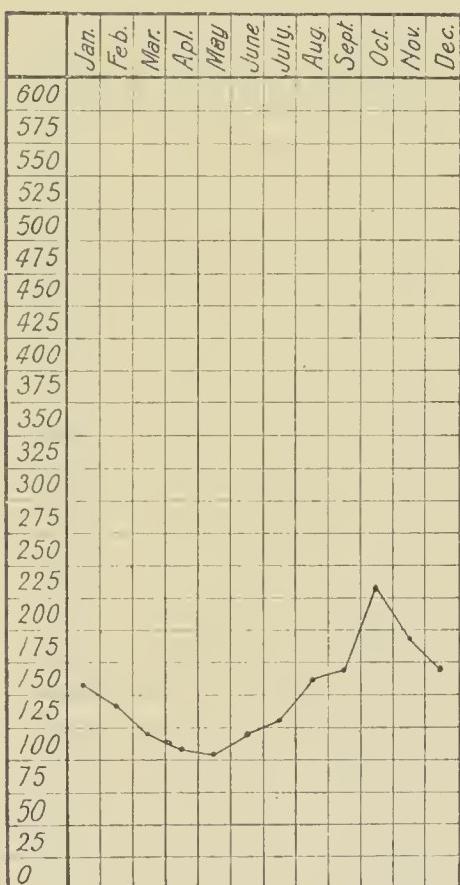
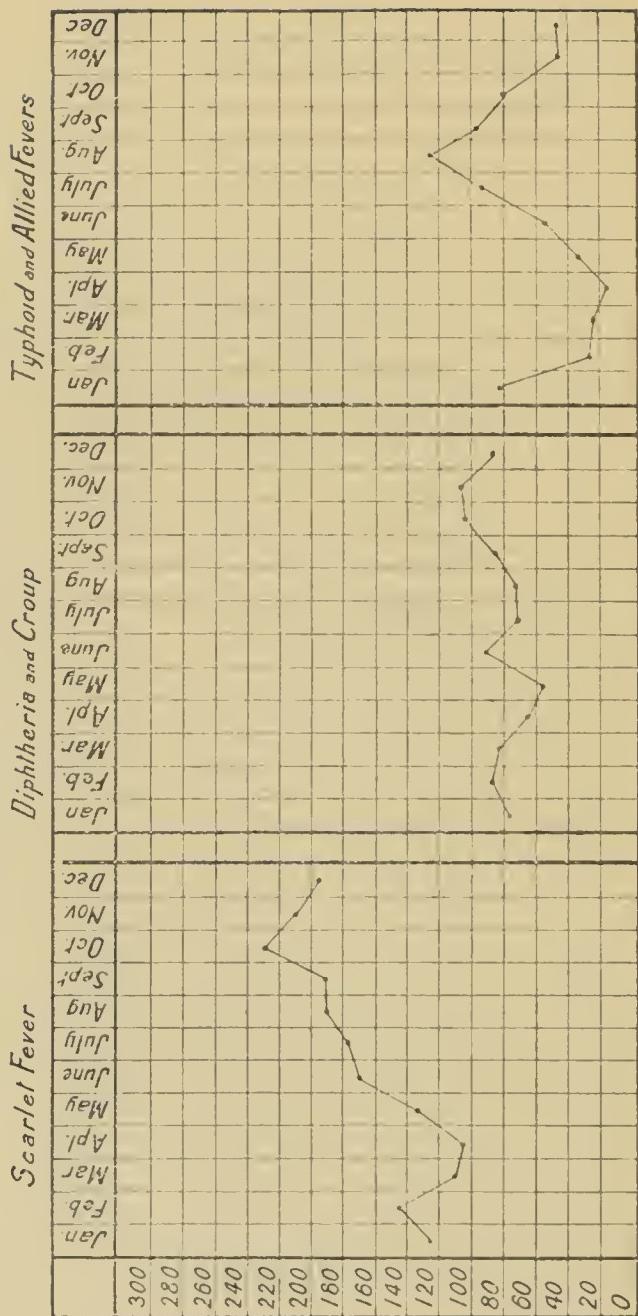


CHART III.

## URBAN DISTRICTS

SEASONAL PREVALENCE OF CERTAIN ZYMIC DISEASES



## CHART IV.

## RURAL DISTRICTS

## SEASONAL PREVALENCE OF CERTAIN ZYMOTIC DISEASES

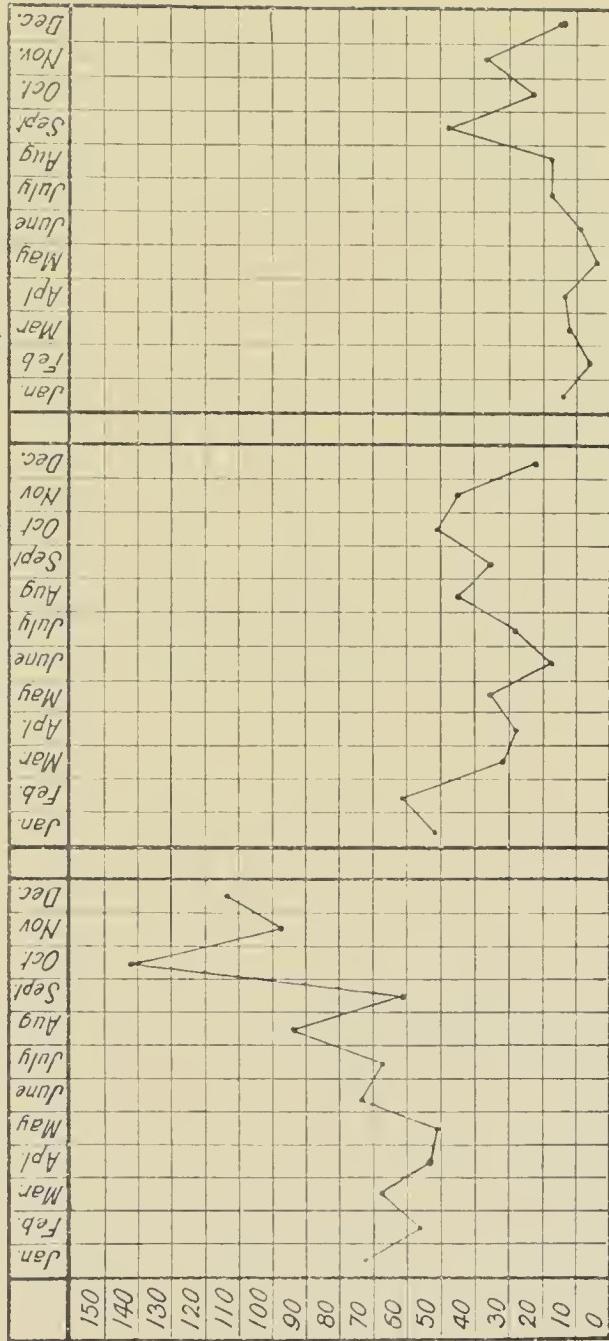
*Scarlet Fever*  
*Diphtheria and Group*

CHART V.

### URBAN DISTRICTS

SEASONAL PREVALENCE OF CERTAIN ZYMIC DISEASES

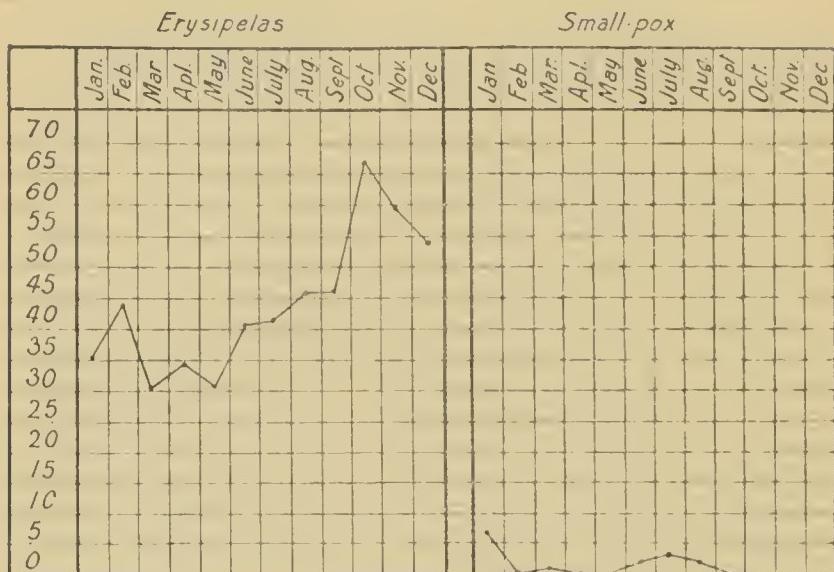
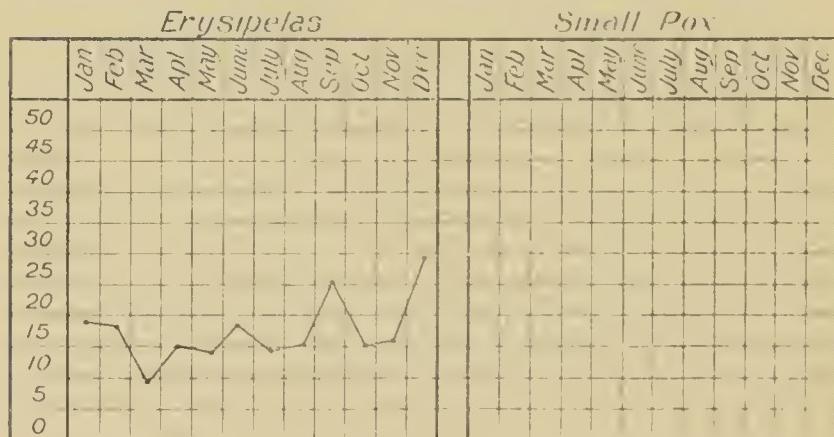


CHART VI.

### RURAL DISTRICTS

SEASONAL PREVALENCE OF CERTAIN ZYMIC DISEASES



## CHOLERA.

One fatal case of (English) Cholera is recorded in the Rochford Rural District and one in Romford Urban District. In case this disease should be introduced into Tilbury Docks, two tents with all appliances are kept in readiness, and the tents can be erected in the course of a few hours.

## SMALL-POX.

Only three cases of this disease occurred in the Rural Districts, two of these were in Leigh Parish (Rochford Rural District), both occurred in the same house. The first patient was a child aged 3 months, who had recently come from Lambeth. The child was removed and most of the inmates of the house re-vaccinated. A man who had refused to be re-vaccinated was attacked a fortnight later and was taken to the hospital. The precautions taken prevented any further spread of the disease. One case occurred in the Romford Rural District. 16 cases occurred in the Urban Districts. In East Ham five cases were notified from two houses in Bendish Road, in Grays there were five cases, and one in Woodford about which no particulars are given. One case in Romford occurred in a lodging house of which the patient was a temporary inmate. He was sent to Highgate Hospital. In Southend there were two cases owing their origin to contact with a case notified during the previous year. After the removal of the first case to the hospital, two of the three inmates remaining in the house were re-vaccinated, but the other, a man who had not been vaccinated, refused, with the result that in a fortnight he sickened with Small-pox. The case was severe but he ultimately recovered.

In several reports reference is made to the laxity of Board of Guardians in enforcing the Vaccination Acts.

## SCARLET FEVER.

TABLE XII.

Urban Districts.	No. of Cases.	No. of Deaths.	Rural Districts.	No. of Cases.	No. of Deaths.
Barking ..	59	2	Belchamp ..	..	54
Braintree ..	28	1	Billericay ..	..	127*
Brightlingsea ..			Braintree ..	..	82
Buckhurst Hill ..	5	0	Bumpstead ..	..	1
Clacton ..	75	1	Chelmsford ..	..	45
Chelmsford ..	8	0	Dunmow ..	..	47
Chingford ..	3	0	Epping ..	..	115
Colchester ..	131	1	Halstead, No. 1 ..	..	4
East Ham ..	267	9	Halstead, No. 2 ..	..	5
Epping ..	16	0	Lexden and Winstree ..	45	2
Grays ..	44	0	Maldon ..	..	28
Halstead ..	45	1	Ongar ..	..	12
Harwich ..	8	0	Orsett ..	..	162
Ilford ..	157	3	Rochford ..	..	32
Leyton ..	564	6	Romford ..	..	98
Maldon ..	21	1	Saffron Walden ..	..	41
Romford ..	42	1	Stanstead ..	..	18
Saffron Walden ..	5	1	Tendring ..	..	34
Shoebury ..	19	0			
Southend ..	102	1			
Waltham Holy Cross ..	2	0			
Walthamstow ..	315	6			
Wanstead ..	22	0			
Witham ..	12	0			
Woodford ..	83	1			
Walton-on-the-Naze ..	0	0			
Totals ..	2033	35	Totals ..	..	950
					17

\* Includes 57 in the Hackney Schools.

## NUMBER OF DEATHS PER 100 CASES.

Urban Districts ..	...	...	1·75
Rural ..	...	...	1·77
County ..	...	...	1·76

The case mortality in the County in 1895 was 2·17 per cent. in 1894, 2 per cent. in 1893, 3·7 per cent. The type of disease which prevailed therefore was milder than in 1894-5 and very much less fatal than in 1893. Walton is the only district which remained entirely free during the year, but in several other districts the cases which occurred were very few in number.

BARKING. The Hospital for a time was overtaxed. A scheme is now under consideration for procuring a site for a Convalescent Home for use of patients recovering from Scarlet Fever.

CLACTON. Scarlet Fever was introduced into this town by some convalescents in the Autumn of 1895, "and there was a continuous succession of mild cases up to November." In June a tent hospital was erected, and it continued in use until the latter part of October.

EAST HAM. There was a decrease here in the number of cases of Scarlet Fever notified, whilst all other Infectious Diseases shewed a slight increase. The Medical Officer of Health says, "I think that the decrease in Scarlet Fever is largely due to the fact of having a hospital for the removal of patients."

EPPING, U. An epidemic here necessitated the closing of the Board Schools, on two occasions. In reporting to the District Council, the Medical Officer of Health insisted upon the importance of the early removal of patients to the Hospital, and advised the distribution of printed instructions and a more careful inspection of premises, with a view to the removal of accumulations of refuse, etc. As far as possible this advice was acted upon, and the epidemic abated. There was a recrudescence, however, towards the end of the year.

HALSTEAD, U. The town had practically been free from Scarlet Fever for three years, when a case was imported. A few straggling cases occurred during the next three months, then the three Elementary Schools were attacked in turn. Although nearly all the cases were promptly removed to the Isolation Hospital, and the houses and bedding immediately disinfected, the disease still spread. With reference to this important subject, the Medical Officer of Health says, "it was in the majority of instances found that another child had already been infected." Disinfection also cannot be thorough, especially in the older cottages, and as many of the inmates of infected houses have not a change of clothes, those worn cannot be disinfected.

ILFORD. There was an epidemic in the Autumn, which necessitated closing the Beehive School and the Gordon Club, which at that time was being used as a temporary Board School. Slight unrecognised cases are believed to have caused the spread of the disease.

LEYTON. The disease was more or less prevalent during the whole year; 40 per cent. of the cases occurred in the Cann Hall Ward.

MALDON, U. Several cases having occurred, it was deemed advisable to open the wooden hospital and remove the patients. Soon after this was done, the disease disappeared.

SOUTHEND. Scarlet Fever was imported into the Borough 11 times during the year.

WALTHAMSTOW. The want of proper means of isolating cases of Scarlet Fever was the chief factor in the spread of the disease. "When it is remembered that there are 141,000 children attending the various Schools in the district, it will not be difficult to understand why, with the imperfect means at our disposal, it is impossible to prevent the spread of infectious diseases."

WOODFORD. An outbreak occurred in the Spring amongst the children attending the Infants' Department of the Church-fields Board Schools. Many patients were sent to the Wanstead Hospital. "Very many more should have been sent, but of course there was no room. This occurred several times during the year."

BELCHAMP. An epidemic occurred in Bulmer parish. The Post Office and Schools had to be closed.

BILLERICAY. A considerable number of cases occurred in Brentwood and South Weald, and the disease was introduced into the Hackney Schools, 57 children being ultimately attacked. These were all sent to the Homerton Fever Hospital.

BRAINTREE, R. Scattered cases occurred throughout the year, but only in two parishes did it become epidemic. Forty cases occurred in Coggeshall. The Feering School had to be closed. The disease was of so mild a character that probably many cases escaped notification.

CHELMSFORD, R. A small outbreak occurred in Danbury parish. Scattered cases occurred in all parts of the district.

DUNMOW. There was a small outbreak in Felstead. At Takeley the disease attacked the Schoolmaster's family, and the School had to be closed.

EPPING, R. Several localized epidemics occurred in this district, and a number of Schools were closed on this account.

LENDEN AND WINSTREE. "The disease occurred in every part of the district, but it was generally of a mild kind, so much so that I believe many cases occurred which were not recognised."

ORSETT. The worst form of the disease occurred at Tilbury Docks. There were 78 cases, resulting in three deaths. In South Ockendon there were 36 cases, and in Stanford-le-Hope 19.

ROMFORD, R. School attendance was the chief factor in the spread of the disease. The Wennington and Collier Row Schools were closed. At the former place the sanitary conditions were bad and Diphtheria was prevalent.

SAFFRON WALDEN, R. Localised outbreaks occurred in several parishes, and the Great Chesterford Schools had twice to be closed.

#### PREVALENCE OF DIPHTHERIA AND CROUP.

TABLE XIII.

Case-rate and Death-rate per 1,000 Population.

	1896.		1895.		5 years 1890-4.	
	Case-rate.	Death-rate.	Case-rate.	Death-rate.	Case-rate.	Death-rate.
Rural Districts ..	1.66	.33	2.04	.45	1.90	.39
Urban Districts ..	2.40	.38	3.21	.61	3.13	.59
County ... ..	2.12	.36	2.72	.55	2.55	.50
England & Wales	—	.28	—	.25	—	.21

One of the most interesting features of the present report is the record of the decreased prevalence of Diphtheria throughout the County. For many years our death-rate from this cause has been more than double that of England and Wales, and whilst in the country generally the mortality has increased in this County it has fallen suddenly both in the Rural and the Urban Districts. This is one of the peculiarities of the disease. For years an extensive district or a very populous town may be comparatively free from the disease; then, for some unknown cause, it more or less rapidly increases in frequency, and for years produces a high mortality. In my report on the distribution of Diphtheria throughout Essex, I showed that this also was the case here, the disease migrating from district to district, increasing in some, decreasing in others in a manner for which it is at present impossible to satisfactorily account. It is sincerely to be hoped that the decrease will continue, and that the County may lose that pre-eminence it has so long possessed of having the highest Diphtheria death-rate in the United Kingdom.

The number of cases and of deaths in each sanitary district are given in the next table.

## DIPHTHERIA AND CROUP.

TABLE XIV.

Urban Districts.	No. of Cases.	No. of Deaths.	Rural Districts.	No. of Cases.	No. of Deaths.
Barking ..	47	6	Belechamp ..	8	1
Braintree ..	3	2	Billericay ..	36	3
Brightlingsea ..	—	—	Braintree ..	21	5
Buckhurst Hill ..	13	2	Bumpstead ..	11	0
Claclton ..	20	2	Chelmsford ..	31	10
Chelmsford ..	44	6	Dunmow ..	25	4
Chingford ..	4	1	Epping ..	24	6
Colchester ..	41	7	Halstead (1) ..	0	0
East Ham ..	176	27	Halstead (2) ..	13	1
Epping ..	3	0	Lexden & Winstree ..	21	5
Grays ..	53	1	Maldon ..	14	3
Halstead ..	5	1	Ongar ..	48	5
Harwich ..	0	0	Orsett ..	26	8
Ilford ..	46	7	Roehford ..	9	3
Leyton ..	221	26	Romford ..	93	20
Maldon ..	12	1	Saffron Walden ..	3	2
Romford ..	66	11	Stanstead ..	13	0
Saffron Walden ..	5	2	Tendring ..	39	9
Shoebury ..	0	0			
Southend ..	56	11			
Waltham Holy Cross ..	3	2			
Walthamstow ..	130	29			
Wanstead ..	28	3			
Witham ..	0	0			
Woodford ..	11	1			
Walton-on-the-Naze ..	17	12			
Totals.. ..	1004	160	Totals.. ..	435	85

**BARKING.** In about half the total number of infected houses, sanitary defects were discovered.

**CLACTON.** In consequence of the unusual prevalence of the disease here, the water supply underwent a searching examination. The result however freed the water from suspicion.

**CHELMSFORD, U.** The Medical Officer of Health says "It is a matter of some surprise that the numbers reported have not been more, for in many cases isolation is of a very rudimentary character, indeed, in some cases, there has been no isolation at all."

EAST HAM. The disease often spread in the infected families, sometimes all the members of the household were attacked. The want of Isolation Wards for the reception of the first cases prevents any check being placed on the spread of the disease. There is no mention of any Epidemic prevalence.

LEYTON. There has been a considerable decrease in the number of cases notified as compared with the previous year. Cann Hall Ward was credited with the highest proportion of cases.

MALDON, U. One case was associated with the unloading of an offensive cargo of London manure. Another was supposed to have been infected from a cat. The cat was destroyed and a post-mortem examination was made, but unfortunately the pharynx was not sent to my Laboratory for Bacteriological examination.

ROMFORD, U. A large proportion of the cases here are attributed to the facility existing for the escape of sewer gas, owing to the faulty condition of the water closets connected with nearly the whole of the cottage property in the town.

SOUTHEND. In 18 out of 38 infected houses leaky drains allowed sewer gas to enter the house, nine cases occurred in a school, the drains of which allowed sewer gas to freely permeate the house. The Medical Officer of Health thinks the chief factors in spreading the disease are :—Dampness of Soil; School Attendance; and Defective Drainage.

Dr. Bruce Low in reporting to the Local Government Board on the prevalence of Diphtheria in Southend, mentions the following conditions amongst others as conducive to the disease :—

- (a). The Rural District of Roehford has never been free from this disease for the past 10 years.
- (b). Proximity to London where the disease is excessively prevalent.
- (c). Overcrowding, together with personal infection.
- (d). Convalescent Homes.

WALTHAMSTOW. The number of cases notified shows a decrease on the previous year, but the type of disease was more severe.

WANSTEAD. The number of cases is in excess of last year. Seven cases occurred in one house, the drainage of which was found to be very defective.

WOODFORD. A small epidemic having occurred here since the end of the year the Medical Officer of Health refers to it, urging that no child who has had Diphtheria should be allowed to return to school until upon Bacteriological examination of the throat is found to be free from the Diphtheria bacillus. This is being done under a temporary arrangement with the School Board and the inoculated swabs are sent to the County Medical Officer of Health for examination and report.

WALTON. "Diphtheria first showed itself in the month of May, and as it seemed more than probable that the disease had some considerable connection with the school, it was closed for a time and thoroughly purified and cleansed, while some of its sanitary arrangements were improved. The disease again appeared in two separate instances, both of which were caused by imported cases from London."

BILLERICAY. Referring to the difficulty of tracing the origin of outbreaks, the Medical Officer of Health says "I am strongly of opinion that Diphtheria is only contracted from Diphtheria, and I think it is the very slight cases which have none of the appearance of Diphtheria, and that are not sufficiently severe to make the patient seek advice, that spread this disease. Bad sanitary surroundings and low damp places form a favourable nidus for its spread. I don't think they cause the disease."

BUMPSTEAD. The whole of the cases (11) recorded in this district occurred in the parish of Steeple Bumpstead, and were in one family.

CHELMSFORD, R. "A small but very fatal outbreak occurred in the parish of Sandon, the first patient being a lad who slept in a van, and went about the district with a threshing machine. Six cases notified as Diphtheria, when Bacteriologically examined gave negative results, and though in some instances there were many children in the houses of the patients it is noteworthy that in no case were any of these infected." The total number of cases notified during the year was much below the average, but the type of disease was unusually severe.

DUNMOW. An outbreak occurred amongst the children attending Great Easton School, and though there were only 14 cases notified there were a number of other children who undoubtedly had diphtheritic attacks and were not attended by any Medical man. "It was owing to one of these children attending school, whilst in an infectious condition, that the outbreak assumed such an extensive character. At the cottage where this child lived, the privy was under a shed, and as the cesspool was not ventilated, the odours from a large collection of faecal matter had no means of escape except through the privy, and the shed made ventilation by this means almost impossible. The warmth from a bakehouse next door probably made matters worse. This insanitary condition of the premises was quite sufficient to account for Diphtheria arising in the cottage. By closing of the School, and a thorough disinfection and cleansing during the time it was closed, and by systematic disinfection of suspected cottages, we were able to get the better of the epidemic."

"The difficulty of reaching parents in order to teach them when a "sore throat" ought to be looked upon in a serious light, is very obvious, but such outbreaks might be greatly diminished if School Masters and Mistresses were taught the cardinal symptoms of Diphtheria, and the necessity of sending suspected children home to be seen by their Medical attendant were impressed upon them. It is the third outbreak of the kind we have had during the past few years."

EPPING, R. Of the 24 cases notified 14 occurred in the parish of Loughton, but six of these were due to infection contracted elsewhere, and four occurred in a Convalescent Home receiving chronic cases of illness, chiefly amongst children from the London Hospitals. Only one case of Diphtheria was removed to the Hospital, the reason being chiefly that the Hospital wards were almost constantly occupied by Scarlet Fever patients and were consequently not available for other diseases.

HALSTEAD II., R. 11 of the 13 notified cases occurred in Stambourne during February and March. A special report was presented on this outbreak.

MALDON, R. Only 13 cases were notified in this district and upon Bacteriological examination several of these could not be regarded as true Diphtheria. This Bacteriological diagnosis was confirmed by the subsequent history of the cases. In five instances there were filth nuisances in or near the infected houses.

ONGAR. A small epidemic occurred in the village of Blackmore where a number of insanitary conditions exist.

ROCHFORD. Only nine cases were notified during the year against 68 in the previous year.

ROMFORD, R. A very large number of cases occurred in this district, the localities chiefly affected being Wennington, Dagenham, and North Hornchurch, parishes in which the sanitary conditions were especially bad. At Wennington some steps have been taken towards improving these conditions by the substitution of pail closets for privies.

Throughout the Rural Districts the type of disease appears to have been more severe than in the towns. This has been noted in previous reports, but throughout the County the type has been milder than usual.

#### DEATHS PER 100 CASES OF DIPHTHERIA NOTIFIED.

		1896.		1895.
Rural Districts	...	19·5	...	22
Urban Districts	...	16	...	19
County	...	17	..	20

It has been suggested that this decrease in the mortality rate is due to the use of "Antitoxin," but I very much doubt whether this is the true explanation.

#### TYPHOID AND ALLIED FEVERS.

Under the heading of Fevers the Registrar General includes "Typhus, Typhoid, Continued, Relapsing, and Puerperal" Fevers. Relapsing Fever is very rarely met with now in the Country and need not be further considered.

Table XV. shews that for the year under consideration, Fevers have not been so generally prevalent as usual in the Rural Districts, but have been more prevalent and have caused a higher mortality in the Urban Districts. The comparatively large number of cases of Typhoid Fever which has occurred in Chelmsford, Barking, East Ham, Ilford, Romford, and more especially in Walthamstow, is practically responsible for the whole of the increase.

TABLE XV.

Case-rate and Death-rate per 1,000 Population.

	1896.		1895.		Mean for 5 years, 1890-1-2-3-4.	
	Case- rate,	Death- rate,	Case- rate,	Death- rate,	Case- rate,	Death- rate,
Rural Districts .. ..	.78	.12	.65	.13	.81	.16
Urban Districts .. ..	1.7	25	1.4	24	1.3	17
Administrative County ..	1.38	20	1.1	19	1.08	17
England and Wales .. —	—	17	—	18	—	183

## TYPHUS FEVER.

This fever, which is probably never absent from Ireland, and from time to time occurs in the slums of our largest and most densely populated towns, appears to be intimately associated with filth and overcrowding. At one time the scourge of our cities, the improvements effected during the present century appear to have almost banished the disease from this country. It is with some surprise, therefore, that a small outbreak has to be chronicled at Thaxted in the Dunmow Rural District. The Medical Officer of Health gives the following account of the cases. A fatal case of Typhoid Fever occurred at Thaxted. It was followed by two other cases in the same family which at first had every appearance of

Typhoid, but later they developed well-marked symptoms of Typhus Fever. The house in which the family lived, as well as the premises, were in a most filthy condition—squalor and dirt predominating—and the space at the back was so confined that there was small chance for escape of the noxious odours. The family had removed to another house when the second and third case arose, but the disease was undoubtedly implanted in them before they removed. As soon as the symptoms of Typhus became manifest they were removed to the parish pest-house, and fortunately there was no spread of the disease.

#### PUERPERAL FEVER.

Thirty-four cases are recorded in the Urban Districts and ~~nine~~<sup>45</sup> in the Rural Districts, giving a total of ~~37~~<sup>45</sup> for the County. These figures undoubtedly are erroneous since in certain districts more deaths are recorded from the disease than cases notified. In the Urban District there were 13 deaths and in the Rural four deaths. As this fever of child-birth is now held to be entirely preventable more attention should be given to the cases which occur, especially where death ensues and no notification of the disease has been received. The necessary investigations invariably require much tact, but that is no reason why they should be shirked. In many reports no reference whatever is made to the subject.

EAST HAM. Most cases (9) occurred in this district and were evidently of a very mild type as not one was fatal. "Houses and drains were inspected and directions given for the nurse not to attend any lying-in cases for a period of three months."

SOUTHEND. "One notification and death. Probably due to Scarlet Fever, as within ten days a case of this disease was notified occurring in the same house."

WOODFORD. An uncertified midwife here continued to attend patients after a case of Puerperal Fever had occurred in her practice and after she had been duly warned by the Medical Officer of Health. Upon another person whom she was attending dying the Medical Officer of Health communicated

held at which the woman was cautioned. A little later a woman she had attended was certified to be suffering from Puerperal Fever, and the Medical Officer of Health was informed that she was attending other cases. An attempt to see her personally failed, so a registered letter was sent to her address containing a "written notice and caution." Since then no further cases have been reported.

In the Rochford Rural District one death occurred from Puerperal Fever, yet no case was notified. In Maldon Rural District there were two deaths and only one case notified.

**BILLERICAY.** The one case of Puerperal Fever was in a cottage where the sanitary surroundings were of the worst and where a short time previously there had been cases of Diphtheria.

**CHELMSFORD, R.** The two cases which occurred here were of the type usually known as Puerperal Septicaemia.

**MALDON, R.** An unnotified case here proved fatal. Death was due to Puerperal Peritonitis and Pneumonia.

Referring to Puerperal Fever an eminent authority says that under this name the disease has given rise to endless controversy. "One writer after another has stated his view of the nature of the affection with dogmatic precision, often on no other grounds than his own preconceived notions, and an erroneous interpretation of some of the post-mortem appearances. Thus, one states that Puerperal Fever is only a local inflammation such as Peritonitis; others declare it to be phlebitis, metritis, metro-peritonitis, or an essential zymotic disease *sui generis*, which affects only lying-in women. The result has been a hopeless confusion." There can be little doubt that there are several types or forms of disease to which the name of Puerperal Fever is given. Some practitioners recognize the whole of the forms as Puerperal Fever and notify them accordingly. Others regard only the more severe forms as Puerperal Fever, and do not notify them all as such. Until some uniformity is secured our statistics are of little value. Medical Officers of Health by their investigations could aid in throwing light on this obscure subject.

### CONTINUED FEVER.

This is another fever of very indefinite character. Doubtless in most cases the patients are suffering from a mild form of Typhoid Fever. In others, the disease may possibly have been a form of Influenza. It is gratifying to note, however, that year by year the number of cases notified as Continued Fever is decreasing, indicating greater precision in diagnosis. Only 18 cases were notified, and of these 16 were in the Urban Districts. Leyton contributed 11, leaving 7 only for the whole of the remainder of the County. In Table XVI. the cases of Continued Fever are included with those of Typhoid Fever.

### TYPHOID FEVER.

No. of cases of Typhoid and Continued Fever notified during 1895 and 1896, together with Deaths per 100 cases.

	1895.			1896.		
	Cases notified.	Deaths.	Mortality per 100 cases.	Cases.	Deaths.	Mortality per 100 cases
Urban Districts ..	455	62	13·6	724	104	14·4
Rural ..	193	40	20·7	201	32	15·9
County ..	648	102	15·7	925	136	14·7

In Table XVI. the number of cases which were notified and the deaths which occurred in each district are recorded.

Ilford .. ..	..	36	9	Orsett .. ..	..	6	0	
Leyton .. ..	..	101	13	Rochford .. ..	..	80	9	
Maldon .. ..	..	1	0	Romford .. ..	..	17	4	
Romford .. ..	..	24	6	Saffron Walden .. ..	..	2	1	
Saffron Walden .. ..	..	2	1	Stanstead .. ..	..	1	—	
Shoebury .. ..	..	45	3	Tendring .. ..	..	7	0	
Southend .. ..	..	93	11					
Waltham Holy Cross .. ..	..	0	0					
Walthamstow .. ..	..	200	22					
Wanstead .. ..	..	6	0					
Witham .. ..	..	2	1					
Woodford .. ..	..	22	1					
Walton-on-the-Naze .. ..	..	1	0					
		727	104			201	32	

BARKING. An outbreak commenced here in July, and in November the Medical Officer of Health made a special report on the subject. He found no facts casting suspicion on the water or milk supply. He sums up as follows:

Probable causation (as far as ascertained up to present date).

Sanitary defects (including defective drains)	..	26
Eating shell fish	..	8
Bathing in polluted water	..	1
Doubtful	..	4

(Note. Some of the cases are inserted under more than one heading. There were 34 cases.)

Two cases afterwards occurred, both of which were connected with drainage defects. From a spot map shewing the distribution of the disease, it is seen that by far the greater number of cases occurred along the course of the old sewer and its connections.

**CHELMSFORD, U.** An outbreak occurred here during July and August. It was sudden in character and confined to the South Ward. The cases, said the late Medical Officer of Health, "are chiefly situated in Moulsham Street, Bridge Row, and Writtle Street. The cause of the outbreak is not yet known, but the disease takes a tolerably well-defined course. I suspect the water supply." The outbreak led to an inspection on behalf of the Local Government Board, the result of which is referred to elsewhere in this report.

**COLCHESTER.** The cases of Typhoid Fever in this town are referred to sanitary defects, the Medical Officer of Health adding "there being not the least suspicion that our renowned bivalve had anything to do with the causation of the disease. I cannot recall a single instance of such a case occurring within the Borough referable to this cause."

**EAST HAM.** Fifty-six cases occurred here. The Medical Officer of Health expresses no opinion as to the cause.

**EPPING, U.** In September a case occurred in a cottage which was in a grossly insanitary condition. At the end of October a case was imported from Walthamstow. It was of a very virulent type and rapidly proved fatal. Four other persons residing in the same terrace became infected. Drainage defects were discovered here. It was not possible to send the cases to the Rural District Infectious Hospital in consequence of both wards being occupied by Scarlet Fever patients.

**ILFORD.** Thirty-three cases occurred in this town and a special report was sent to the Local Government Board, but no copy appears to have been furnished to the County Council.\*

**SHOEBURYNESS.** The Medical Officer of Health says "During the past year we have had many cases of Enteric Fever. The origin of nearly all was traced to the use of impure water."

\* A copy has since been received.

SOUTHEND. The cause of the continued prevalence of Typhoid Fever in this Borough is fully discussed, and it is pointed out that the case-rate is markedly increased on account of mild and anomalous cases being notified "to an extent not perhaps elsewhere practised." The Medical Officer of Health agrees with the Inspector of the Local Government Board that the water supply cannot be suspected, and that the most probable cause is the fouling of the subsoil by defective drains and sewers, the burying of imperfectly disinfected stools, etc.

WALTHAMSTOW. There was a sudden outbreak of Typhoid Fever in January, and in June there was another somewhat rapid increase in the number of cases notified. One of the most marked features of the outbreak was the large number of children who were attacked. The sudden outbreak and cessation pointed to some common cause, and as a result of his investigation, the Medical Officer of Health concluded that it was "more than probable that the outbreak was due to some temporary contamination of the water supply." After the rerudescence in June, samples of water were submitted to the County Medical Officer of Health and others for examination, and nearly all the samples taken showed that the drinking water was but imperfectly filtered. This subject is again referred to under the head of Water Supplies.

WOODFORD. Towards the end of the year there was an outbreak of Typhoid Fever at the lower end of the district, which lies close to the river. This occurred after the heavy and continuous rains of September, and as many of the cottages were supplied with water from shallow tube wells, a sample was submitted to analysis and pronounced to be contaminated. One well was closed by an order from the Magistrates, others were closed voluntarily, and the public supply laid on.

BELCHAMP. Four cases occurred in one family in Wickham St. Pauls. The first case was infected at a sea-side resort.

BILLERICAY. Five cases are reported as being undoubtedly due to poisoning by sewer gas.

CHELMSFORD, R. One patient was infected at a sea-side resort, two in the town of Chelmsford, and several of the others were associated with filth nuisances.

EPPING, R. One case attributed to eating oysters, most of others to drainage defects.

MALDON, R. The epidemic in the parish of Steeple which commenced during 1895 continued into 1896. Its origin was attributed to the use of water from a polluted well. In another case (Howe Green) the patient became infected at a sea-side resort, and infected four other persons in and near his home. A series of somewhat doubtful cases occurred in Burnham; they were of the "Typho-malarial" type.

ROCHFORD, R. A large number of cases occurred in this district. In Leigh there were 16 cases, nearly all of which were in the older portion of the town. The Medical Officer of Health says:—"No doubt the defective condition of the sewers is in a large measure accountable for this."

ROMFORD, R. Twenty-five cases were reported. "Some of them brought into the district, others connected with local sanitary defects, especially so in North Hornchurch. One especially tragic outbreak occurred in one family at Squirrels Heath Terrace, where three members died from the disease. In the treatment of these cases the want of an Isolation Hospital was grievously felt." At Harold Wood one case occurred near the Station at which London manure was unloaded. Notice was served to the Railway Company to discontinue the nuisance, and this was complied with.

SAFFRON WALDEN, R. The two cases here were lads who both drank water from the same pump. Upon analysis this water was found to be polluted.

#### DIARRHŒA.

Diarrhœa (including Cholera and Dysentery) is included by the Registrar-General in the seven principal Zymotic Diseases, and the zymotic death-rate means the deaths per 1,000 population from the whole of these seven diseases. In one or two instances Medical Officers of Health have omitted the deaths from Diarrhœa when calculating the zymotic death-rate. It is obvious that when this is done the figures obtained are of no value, since they are not comparable with the true zymotic death-rate of other districts.

During 1896 the mortality from Diarrhoea has been excessive, but not so high as in the preceding year. The deaths recorded number 382, and of these 312 were of children under five years of age.

		Children under 5 years.	Persons over 5 years.	Total.
1896	...	312	... 70	382
1895	...	402	... 103	505

The death-rates per 1,000 population are as under :—

	1895.	1896.	Mean for 5 years, 1890-4.
Urban Districts	... .76	... .95	... .53
Rural	... .28	... .50	... .36
County	... .57	... .76	... .45
England and Wales	... .55	... .90	... .55

BARKING. "There is a very distinct fall of deaths from this disease in 1896, though I think a few cases returned as Gastro-enteritis ought probably to be added to make the comparison more accurate."

LEYTON. "There has been a larger number of deaths this year than in the previous two years (Table XIV.)

"The disease was most prevalent in July and August, at the end of the spell of hot summer weather. In these two months there were 44 and 22 deaths respectively, out of 87 deaths during the year.

"It chiefly attacked very young children, 83 being under five years of age, and in July alone 40 of the 44 deaths recorded were actually under one year of age, the remaining four being under two years of age.

"In a great measure, this disease could be kept in check, were parents sufficiently careful in dieting their children during the hot weather, and in scrupulously keeping feeding-bottles clean and sweet.

"I feel confident that the serious nature of this complaint is not sufficiently realised by the poorer classes. The symptoms are generally attributed, through ignorance, to teething, or 'consumptive bowels,' and many children are brought for medical aid when almost moribund, the triviality of Diarrhoea from teething, or the supposed hopelessness of 'consumptive bowels,' dulling the parents' sense of danger."

SOUTHEND. During the hot weather in July and August, 17 deaths were registered. Special interest centred on this disease, the Medical Officer of Health pointing out that the opinion that both Typhoid Fever and Diarrhoea bear some relation to the pollution of the soil, is confirmed by the fact, the increased prevalence of Diarrhoea commences at the same time as that of Typhoid Fever.

	Notification of Enteric Fever.		Deaths from Summer Diarrhoea.
July	...	4	...
August	...	23	13

WALTHAMSTOW. The death-rate from Diarrhoea, which had shewn a tendency to decrease, rose very high in 1895, and still stands high. In the early part of the summer notices were left at every house in the district drawing the attention of those who had the care of young children, to the importance of paying due attention to the feeding of infants, and the sanitary condition of their surroundings. It was hoped thus to lessen the terrible infantile mortality from this disease.

In the Rural Districts the diarrhoeal mortality was highest in Epping, Roehford, and Romford.

#### MEASLES AND WHOOPING COUGH.

##### DEATH-RATES.

TABLE XVII.

	Measles.			Whooping Cough.		
	1896.	1895.	Mean of 5 years, 1890-4.	1896.	1895.	Mean of 5 years, 1890-4.
Rural Districts .. .. ..	.25	.15	.15	.30	.20	.31
Urban Districts .. .. ..	.35	.66	.37	.41	.26	.46
County .. .. ..	.31	.47	.28	.37	.23	.40
England and Wales .. .. ..	.56	.37	.40	.41	.30	.41

Speaking generally Measles has been less fatal than in 1895, but the mortality has been above the average. On the other hand Whooping Cough has been more prevalent, but the mortality has not exceeded the average.

In East Ham	Measles caused 28 deaths & Whooping Cough 23		
Grays	17	,	6
Halstead (U)	17	,	2
Leyton	23	,	54
Walthamstow	19	,	37

In the Rural Districts, Chelmsford and Saffron Walden suffered most severely from these diseases.

Chelmsford R. Measles caused 11 deaths and Whooping Cough 10.

Saffron Walden, R. Measles caused 7 deaths and Whooping Cough 15.

Measles and Whooping Cough can be added by any Sanitary Authority to the list of Infectious Diseases which must be notified, but Colchester is the only district in which their notification is compulsory. There is considerable doubt whether any advantage would be gained by notification, but one or two Medical Officers of Health report in favour of notification being compulsory.

#### NUMBER OF CASES OF INFECTIOUS DISEASES TREATED IN ISOLATION HOSPITAL.

In the Braintree, Brightlingsea, Chingford, Ilford, Romford, Waltham Cross, Walthamstow, Witham, and Walton Urban Districts not a single case of Infectious Disease was removed to an Isolation Hospital, these districts at the present time being without Hospital accommodation.

In the Belchamp, Bumpstead, Halstead No. 2, Maldon, Ongar, ~~Orsett~~, Romford, Stanstead, and Tendring Rural Districts not a single case is reported as having been removed, although the Halstead district has an arrangement for sending cases to the Urban Hospital and ~~Orsett possessed an Isolation Hospital.~~

The following table gives the number of cases of Diphtheria, Scarlet Fever, and Typhoid Fever which occurred in the remaining districts and the number removed.

District.	No. of cases of Scarlet Fever, Croup, Diph- theria, and Typhoid Fever notified.	No. of cases removed to Hospital.	Cases removed per cent.
<b>Urban —</b>			
Barking ...	142	87	61
Buckhurst Hill ...	21	4	19
Chelmsford ...	88	15	17
Colchester ...	189	23	12
East Ham ...	498	86	17
Epping ...	25	10	40
Grays ...	107	8	7·5
Halstead ...	55	45	82
Harwich ...	11	6	54
Leyton ...	872	106	12
Saffron Walden ...	12	6	50
Southend ...	252	111	44
Wanstead ...	56	11	20
Woodford ...	113	31	28
<b>Totals</b>	<b>2,441</b>	<b>549</b>	<b>Mean 22</b>

**Rural —**

Billericay ...	178	36	20
Chelmsford ...	86	36	42
Epping ...	145	47	32
Rochford ...	120	22	18
Saffron Walden ...	46	26	57
Orsett ...	194	8	4
<b>Totals</b>	<b>769</b>	<b>175</b>	<b>23</b>

**NOTE.—**The Leyton Hospital was only opened in the Autumn.

From the above figures it is obvious that in many districts the isolation accommodation is either sadly deficient or that the accommodation provided is not utilized.

The position of Grays and Orsett is quite exceptional. There is a Hospital at Orsett used jointly by the two districts, with four wards and capable of accommodating 16 or more patients, yet out of 301 persons who suffered from the diseases named only 16 were removed. Is not this, in part, an explanation of the fact that the zymotic sickness rate in both districts is excessive.

#### METEOROLOGICAL DATA AND THE PREVALENCE OF CERTAIN ZYMOTIC DISEASES.

The subjoined Table (XVIII.) contains the results of the meteorological observations taken at the Royal Meteorological Station at Chelmsford, together with the monthly return of cases of Infectious Sickness.

The following additional rainfall records are taken from the Medical Officer's Reports, with the exception of those for Manningtree.

	Billericay.	Saffron Walden.	Southend.	Waltham Holy Cross.	Walthamstow.	Manningtree.
January ...	...	.89	.79	.52	.70	1.35
February ...	...	.57	.68	.23	.27	.70
March ...	...	2.95	2.62	3.30	2.94	2.88
April ...	...	.94	.61	.92	.54	.78
May ...	...	.30	.19	.20	.28	.60
June ...	...	2.95	2.78	2.31	2.35	2.61
July ...	...	.88	1.12	.89	1.28	.80
August ...	...	3.29	2.53	2.83	1.73	3.36
September...	...	5.85	3.57	6.76	5.40	5.03
October ...	...	3.62	3.19	3.76	3.51	2.35
November ...	...	1.14	1.03	1.19	1.59	.93
December ...	...	3.28	2.63	3.50	4.36	2.89
Total ...	22.57	26.66	21.74	26.41	24.95	24.28
Total for year						
1895	20.12	23.21	19.38	20.06	20.98	...
,, 1894	25.36	...	...	25.14	29.35	...

TABLE XVIII.

METEOROLOGICAL DATA AND PREVALENCE OF INFECTIOUS DISEASES.  
For Year ending December 31st, 1896.

	METEOROLOGICAL DATA.				INFECTIOUS DISEASES NOTIFIED.					TOTAL.		
	Mean Temperature.	Mean Daily Range.	Relative Humidity.	No. of Rainy Days,	Rainfall.	Small-pox.	Diphtheria and Croup.	Fever.	Scarlet Fever.			
January ...	... ...	39·35	10·3	93·	11	70	7	130	9·5	200	53	485
February ...	... ...	38·75	12·3	89·	8	63	0	149	31	202	61	443
March ...	... ...	44·75	13·9	84·	22	2·96	3	113	33	180	39	368
April ...	... ...	47·75	18·3	79·	7	·59	2	9·5	26	158	49	330
May ...	... ...	52·95	23·3	66·	3	·21	0	92	37	183	45	357
June ...	... ...	63·3	23·15	68·3	9	3·33	3	110	63	244	58	478
July ...	... ...	63·75	25·3	66·	7	·59	4	99	109	244	56	512
August ...	... ...	58·45	18·5	73·	12	3·05	2	116	153	281	61	613
September ...	... ...	56·9	12·46	85·5	20	·5·04	0	120	143	250	72	585
October ...	... ...	45·4	14·2	90·	17	2·79	0	152	102	375	82	711
November ...	... ...	38·9	12·32	88·	10	1·13	0	152	79	306	75	612
December ...	... ...	37·9	10·2	94·	19	·3·08	0	109	60	308	82	559
Means and Totals ...	... 49·3	16·17	81·3	145	24·10	21	1437	931	2931	733	6053	

## ISOLATION HOSPITALS AND REFERENCES THERETO.

BARKING. A Humphry's Iron Hospital with two wards, 10 beds. A separate Hospital with two wards, for four beds each, reserved for small-pox cases. The two Hospitals within 50 yards of each other. Portion of old farm-house used by caretaker.

BRAINTREE, U. Has combined with the Braintree Rural District for the provision of a joint Hospital.

BRIGHTLINGSEA. No Hospital.

BUCKHURST HILL. No Hospital. Occasionally sends cases to the Epping, R., Hospital.

CLACTON. Has purchased ground, and steps are being taken to provide a permanent Hospital as speedily as possible. A Tent Hospital is in readiness for an emergency.

CHELMSFORD, U. A pair of cottages. The Medical Officer of Health says:—"I would again draw your attention to the report of your late Medical Officer of Health as to the inadequate accommodation provided by this Hospital, and urge the necessity of providing increased accommodation as soon as possible."

CHINGFORD. No Hospital. An arrangement whereby cases may be sent to the Epping Hospital. The Medical Officer of Health says:—"A visit paid by myself to the Epping Isolation Hospital during the year has led me to the conclusion that in its present condition it is not very well adapted for the reception of Chingford cases, the accommodation provided being barely sufficient to supply the needs of the Epping Rural District alone. . . . At present the Urban District Council seem rather in favour of uniting their forces with those of Buckhurst Hill and Woodford in one or other of the three parishes."

EAST HAM. "Our Isolation Hospital is of corrugated iron and contains three wards, with 18 beds and room for more if required." There is only provision for treating one disease at a time.

EPPING, U. No Hospital. Cases are sent by arrangement to the Rural District Hospital, but the accommodation is inadequate and unsatisfactory. With reference to this Hospital, the Medical Officer of Health says:—"It is defective as regards construction, and as it consists of only two wards, it does not provide sufficient accommodation for isolating more than one disease; besides these objections, the system of providing trained nurses only as they are required, instead of a permanent staff, has proved in the end to be very expensive."

GRAYS. No Hospital, but there is an arrangement whereby cases may be sent to the Hospital belonging to the Orsett Rural District.

HALSTEAD, U. A permanent Hospital on Local Government Board plans, only recently completed. Very satisfactory and well equipped.

HARWICH. Two pavilions of two wards each, with detached administrative block. Material of which they are constructed not stated.

ILFORD. An Isolation Hospital is now in course of erection.

LEYTON. The new Hospital (Humphry's, iron) comprises three ward blocks for 43 Scarlet Fever patients, one ward block for 10 Diphtheria patients, a laundry block with bath and discharge room, and an administrative block. The blocks are 40ft. apart and 40ft. from the boundary of the site. The Medical Officer of Health says:—"Of the usefulness of the building there can be no question, but whether it is capable of dealing adequately with our infectious disease is a matter which time alone will show. The enquiry made by the County Council was, in my opinion, somewhat premature, for at that time the Hospital was only in its infancy, having been opened but a few weeks, and it was therefore impossible to tell the extent of its usefulness in checking the spread of infectious disease."

MALDON, U. No Hospital. A Provisional Order has recently been applied for, for the formation of a Combined Hospital District, to comprise the Borough of Maldon, part of

the Maldon Rural District, and the area under the control of the Port Sanitary Authority. A suitable site for a Hospital has been obtained.

**ROMFORD, U.** No Hospital, and apparently "no serious attempt has been made by the Council to provide one."

**SAFFRON WALDEN, U.** Two ward blocks, each ward for two beds, together with a farm-house with four available rooms, and a caretaker's cottage. Used jointly by the Urban and Rural Districts.

**SHOEBURYNESS.** No Hospital.

**SOUTHEND.** The borough sanatorium has been increased by the addition, during the year, of two ward blocks (10 patients), an administrative block, laundry, etc. "The staff consists of medical superintendent (Medical Officer of Health), nurse matron, two staff and one assistant nurse, a probationer, two ward maids, a general servant, laundress and porter." The old Small-pox Hospital has been taken down, but another is to be provided.

**WALTHAM HOLY CROSS.** The temporary iron and wood Hospital has been in readiness during the year, but has not been called into requisition.

**WALTHAMSTOW.** Plans for a proposed Hospital on a site at Chingford Hatch have been submitted to the Local Government Board for approval. The Hospital is greatly needed, and one should be provided with as little delay as possible.

**WANSTEAD.** "The iron and wood Hospital here is used jointly with Woodford. The Medical Officer of Health says:— "It will be necessary to thoroughly cleanse and re-varnish the interior during the year."

**WITHAM.** The great desirability of having a small Hospital is urged by the Medical Officer of Health. He says that twice during the year children of railway *employés* have been attacked with Scarlet Fever. The men were obliged to remain away from their posts until the houses were declared free from infection, thereby causing enforced idleness and considerable

pecuniary loss. "The first necessary step is the selection of a site, and this, I am afraid, is still as far as ever from being determined, and it is my duty to urge upon you the necessity for an early decision on your part as to the mode of carrying out some plan of isolation."

WOODFORD. *Vide Wanstead.* Several times during the year the Wanstead Hospital has not been able to accommodate all the Woodford cases.

WALTON. There is no Hospital. The Medical Officer of Health says:—"Of course, it would be costly for Walton to provide and maintain a Hospital for its own use, but the fact must not be forgotten that every district is by law obliged to make this provision." A suggestion to combine with Clacton has not proved feasible.

#### RURAL DISTRICTS.

BELCHAMP. No Hospital of any kind. No reference to any steps being taken to provide one, or to any combination being effected with other districts in the Sudbury Union.

BILLERICAY. A brick building in Buttsbury parish. Found of the greatest service. The average stay in hospital of Scarletina cases was 36 days, of Typhoid Fever 44 days, of Diphtheria 39 days.

BRAINTREE. *Vide Braintree, U.*

BUMPSTEAD. "The Rural District Council has again had this matter under consideration, and the Chairman, Clerk, and Medical Officer of Health met Dr. Thresh . . . and represented to him that the District Council were quite willing to act in the matter jointly with the Clare Rural District Council in the Risbridge Union. Steps will now be taken to form a Joint Hospital Board for the two districts."

CHELMSFORD. There is here one of the Local Government Board model Hospitals, fully equipped.

EPPING. The faulty construction of the Hospital and the inadequate accommodation provided is referred to, and the Medical Officer of Health says:—"Should it be decided to retain the Hospital for the sole use of your district, I would point out that some better means for warming the wards must be provided. Wooden buildings are always difficult to warm in winter, and difficult to keep cool in summer, but in this Hospital the match-boarding and window sashes have shrunk, draughts are admitted in all directions, and it is with difficulty that a temperature of 50° F. can be maintained in cold weather. The arrangement of the Hospital with two wards separated by a nurses' room renders it quite unsafe to have patients suffering from more than one disease at a time. Two wards admit of the separation of the sexes, but nothing more. It is a question for your Council to consider whether another brick pavilion, or at least another ward, with separate nurses' room, should not be added. It is also very desirable that a steam disinfecter should be provided.

HALSTEAD, No. 1. An arrangement has been made with the Halstead Urban District Council for the reception of patients from this district in the Urban Hospital.

HALSTEAD, No. 2. There is a Cottage Hospital at Hedingham which serves for several parishes, but the Medical Officer of Health says:—"An Isolation Hospital for the parishes of Ridgewell, Stambourne, Tilbury and Toppesfield is a desideratum."

LEXDEN AND WINSTREE. There is a large Tent Hospital, with van. This has been found "of great use in arresting the spread of disease. Scarlet Fever broke out in a small cottage at Mount Bures, occupied by a family all the members of which had the disease. The Hospital was erected and the entire family placed in it, with the result that the disease did not spread in the surrounding houses, of which there were several close by."

MALDON. *Vide* Maldon, U. For the southern portion of the district a suitable site has been obtained, and plans are being prepared for a small Hospital.

ONGAR. There is no provision of any kind in this district for isolating infected persons. The subject has been considered, and the Medical Officer of Health says:—"The matter is one of some difficulty, and one or more plans which seemed to give promise of success have had to be abandoned as impracticable."

ORSETT. There is a Hospital here with two pavilions, caretaker's cottage, etc. The equipment is not very good, but very little use is made of the accommodation provided.

ROCHFORD. Use is made of a small farm-house, but its inadequacy is admitted. The provision of a Hospital for the joint use of this Rural District and the new Urban Districts of Shoeburyness and Leigh is under consideration.

ROMFORD. No Hospital accommodation of any kind.

SAFFRON WALDEN. *Vide* Saffron Walden, U.

TENDRING. There are three hospital tents in this district but they have not been used during the year.

## SECTION III.

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### SANITARY ADMINISTRATION AND REFERENCES TO INSANITARY CONDITIONS.

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#### *The Housing of the Working Classes. Cottage Accommodation. Overcrowding.*

There is no record of any Sanitary Authority contemplating adopting Part III. of the Housing of the Working Classes Act and providing workmen's cottages, although the want of such cottages is referred to in many reports. This part of the Act is generally considered impracticable. Parliament appears to have considered that unless certain restrictions were imposed Sanitary Authorities would proceed recklessly to erect cottages for the labouring classes. No opinion could have been more erroneous. Labourers' cottages will not be provided until these restrictions are removed, and some arrangement is made for providing the money from a county or imperial fund.

Under Part II. it is the duty of the Medical Officer of Health to make the necessary inspections and report upon such houses as he considers unfit for human habitation. After receiving a representation to this effect the Sanitary Authority may take proceedings to cause the house to be closed, but unfortunately the Magistrates do not always support the Medical Officer and more than one case when taken into Court has failed. This result has proved most discouraging. Damp, structural defects, dilapidations, etc., are mentioned in many reports, and occasionally it is remarked that really the

houses are unfit for habitation but if they were closed the evicted tenants would be homeless, or be driven from the district on account of the scarcity of cottages.

The following is a record of the houses closed and houses placed in habitable repair so far as can be gathered from the reports presented.

	Houses closed.	Houses placed in habitable repair.
Urban Districts—		
Brightlingsea	0	1
Buckhurst Hill	0	10
Chingford	0	4
Colchester	4	7
East Ham	7	0
Epping	0	9
Grays	16	1
Ilford ..	2	11
Leyton	8	38
Southend	1	1
Waltham Cross	0	7
Wanstead	1	—
Woodford	0	10
Walton	3	—
Totals	42	99
	—	—
Rural Districts—		
Belchamp	0	4
Bumpstead	0	4
Chelmsford	16	72
Dunmow	2	6
Epping	8	20
Halstead	2	3
Lexden and Winstree	4	21
Maldon	1	18
Orsett	10	6
Romford	3	7
Saffron Walden ..	0	9
Totals	46	170
	—	—

In Waltham Holy Cross proceedings are apparently being taken under Part I. of the Housing of the Working Classes Act, and a Provisional Order has been obtained to put in force the Compulsory Clauses of the Lands Clauses Act for the purchase of lands. The scheme, called the High Bridge Street Improvement Scheme, has so far advanced, that 10 plots of land on the East Brook Estate have been provisionally purchased whereon to build dwellings for the persons displaced from the condemned area. The buildings plans are now awaiting the sanction of the Local Government Board.

CHELMSFORD, R. The suggestion to put in force Part III., Housing of the Working Classes Act and erect cottages in the parish of Ingatestone, referred to in last year's report, has not been acted upon, as land has since become available, and private enterprise promises to do all that is required. Indirectly, therefore, the agitation was advantageous.

SHOEBURYNESS. "Overcrowding is prevalent in some parts of the district due to the scarcity of houses in comparison to the population."

#### RESULTS OF SYSTEMATIC INSPECTION.

The Order of the Local Government Board specifying the duties of a Medical Officer of Health, says :

(3) He shall by inspection of the district, both systematically and at certain periods, and at intervals as occasion may require, keep himself informed of the conditions injurious to health existing therein.

In numerous reports no reference is made to systematic inspection, and in some cases inspections only appear to be made when a special request is made by the Authority or Sanitary Inspector. In other instances no reference is made to systematic inspection yet the reports bear indication of such inspections having been made.

BARKING. Special inspection of a number of courts and alleys in the Old Town, and in connection with the outbreak of Typhoid Fever. Many insanitary conditions discovered.

CHINGFORD. Periodical inspections made.

COLCHESTER. The systematic inspection of the house drains revealed the fact that 85 per cent. were defective.

EAST HAM. The systematic inspection of the district shewed that in "80 per cent. of the houses inspected various works of sanitary amendment were required to be executed to put the premises in a sanitary condition."

EPPING. Special inspections were made of several portions of the district and reports presented thereon.

GRAYS. "During the year," says the Medical Officer of Health, "practically the whole of the Sanitary district has been inspected by the Sanitary Inspector and by myself."

LEYTON. The house-to-house inspection continues, and its benefits pointed out by some very striking quotations from the Inspector's reports. Out of 3,666 houses examined, sanitary defects were found in 2,796, that is in 76 per cent.

MALDON. Inspection revealed many insanitary conditions. These are referred to in a subsequent sub-section.

ROMFORD. "Periodical inspections of various parts of the district have been made."

SHOEBURYNESS. Periodical inspections made by Medical Officer of Health and Inspector.

SOUTHEND. A house-to-house inspection is in progress, and the results shew how necessary it is to press on the work. In one street, quoted as an example, 75 per cent. of the drains were defective.

WALTHAMSTOW. The Medical Officer of Health made the usual inspections and devoted considerable time to the investi-

gation of the outbreaks of Typhoid Fever. Out of 1,436 houses inspected, works of various kinds were executed in 940—that is, in 65 per cent.

WALTON. A careful inspection of the whole of the district has been made, the Medical Officer of Health giving especial attention to the drainage and water supply.

BELCHAMP. "Systematic as well as special inspections have been made throughout the district during the year."

CHELMSFORD, R. All parishes visited and a house-to-house inspection made in certain districts, resulting in the discovery of numerous nuisances.

EPPING, R. Systematic and special inspections made and special reports presented thereon.

HALSTEAD, R., No. 1. A systematic inspection made of Earls Colne. Sanitary defects found consisted chiefly of dilapidated privies, wrongly constructed sink drains, and one case of overcrowding.

HALSTEAD, R., No. 2. A systematic inspection of the parish of Stambourne was made in the early part of the year.

MALDON, R. To ensure the more systematic inspection of the district, the parishes have been divided into small groups, and the two Inspectors have been requested to report upon dairies and cowsheds, slaughter-houses, and the general sanitary condition of one group, in each of the districts under their charge, at each monthly meeting. A special form for reporting is being drawn up by the Clerk. If this programme be adhered to, the efficiency of the sanitary administration will be greatly increased.

ONGAR. A special inspection was made of the parish of Blackmore, in consequence of an outbreak of Diphtheria.

ORSETT. A systematic inspection of part of the district has been made—about 400 houses in all.

ROCHFORD. All the more important villages appear to have been inspected, both by the Medical Officer of Health and Sanitary Inspector.

ROMFORD. Special inspections made in various districts. and reports presented thereon.

TENDRING. Numerous special inspections are referred to,

#### THE FACTORIES AND WORKSHOPS ACT, 1895.

By this Act the occupier of every Workshop is required to notify to the Inspector of Factories the fact of such occupation, and such notices are then to be forwarded by the Inspector to the Sanitary Authorities in which the Workshops are situated. From the small number of notices received, it is very evident that a considerable proportion of Workshops are not yet registered, and probably therefore not inspected.

The following brief epitome of the Act, so far as it affects Sanitary Authorities, prepared by Dr. Fosbroke, Medical Officer of Health for the County of Worcester, will probably be of service to Medical Officers of Health :—

As the Factory and Workshop Act, 1895, came into operation on January 1st last, the attention of Occupiers of Workshops is specially directed to Section 41 of that Statute, which is as follows :

“ Every person who is in occupation of a Workshop at the commencement of this Act, shall before the expiration of twelve months from the commencement of this Act, unless he has already done so in pursuance of Section 26 of the Act of 1891, serve on the Inspector for the District a written notice, containing the name of the Workshop, the place where it is situate, the address to

which he desires his letters to be addressed, the nature of the work, and the name of the person or firm under which the business of the Workshop is carried on, and in default shall be liable to a fine not exceeding Five Pounds. Any notice so served shall be forthwith forwarded to the Sanitary Authority of the District in which the Workshop is situate."

The expression "Workshop" means any premises, room or place (devoid of machinery moved by steam, water or other mechanical power) in which any manual labor is exercised by way of trade for the purposes of gain : that is to say—

- (a) In or incidental to the making of any article or of part of any article ; or
- (b) In or incidental to the altering, repairing, ornamenting or finishing of any article ; or
- (c) In or incidental to the adapting for sale of any article and to which or over which premises, room or place the employer of the person working therein has the right of access or control.

The Factory and Workshop Act, 1895, includes Laundries, but exempts those in which the only persons employed are either

- (a) Inmates of any prison, reformatory or industrial school, or other institution for the time being subject to inspection under any Act other than the Factory Acts ; or
- (b) Inmates of any institution conducted in good faith for religious or charitable purposes ; or

(c) *Members of the same family dwelling on the premises with not more than two other persons dwelling elsewhere.*

Notices as to the occupation of Workshops should be forwarded to the Inspector of Factories and Workshops for the District.\*

The Sanitary condition of all Workshops (including Bakehouses and Laundries) is placed under the supervision of local Sanitary Authorities, who are also responsible (under certain circumstances) that reasonable means of escape in case of fire are provided.

Special attention is directed to Section 6 of the Faactory and Workshop Act, 1895, which is as follows :

“ If any occupier of a Faactory or Workshop, or laundry or of any place from whieh any work is given out, or any contractor employed by any such occupier, causes or allows wearing apparel to be made, cleaned or repaired in any dwelling house or building occupied therewith, whilst any inmate of the dwelling house is suffering from Scarlet Fever or Small-pox, then unless he proves that he was not aware of the existenee of the illness in the dwelling house, and eould not reasonably have been expeeted to beeome aware of it, he shall be liable to a fine not exceeding Ten Pounds.”

COLCHESTER. The number of Workplaces inspeeted was 998, and the number of Workshops 58, in all of which premises Tailoresses, Military Shirtmakers, Dressmakers, Milliners,

\* The Inspector of Factories for North Essex is C. C. W. Hoare, Esq., Central Chambers, Norwich; and the Inspector for South for South Essex is A. P. Vaughan, Esq., Home Office, London, S.W.

Tailors, Boot and Shoemakers were employed. The Inspector thinks that now the occupiers of domestic workshops keep them in a fairly clean and sanitary condition. 245 defects were reported. In regard to any Infectious Disease notified among the outworkers, steps have been taken at once to inform them that any work on premises must be handed over to the Sanitary Authority for the same to be disinfected before being returned to their employers, and where necessary, notice has been served on the employer to discontinue sending any work to the premises till they have been disinfected.

**WALTHAMSTOW.** Mr. West, the Chief Sanitary Inspector, says :—“ We have up to the present received notices as to 33 premises, but it is certain that that number is far from including all in the district, probably owing to ignorance of the Act's requirements. It will be necessary to keep observation of premises so used and secure the necessary notification. . . . During the year, in those already notified, overcrowding has been abated in four cases, insufficient or defective w.-c. accommodation remedied in three cases, and one place cleansed.”

#### SEWERAGE AND REFUSE DISPOSAL.

**BARKING.** The sewage flows by gravitation to the outfall works by the Creek. It is then treated with certain chemicals and allowed to settle. There are three tanks, each holding about one day's flow, 250,000 gallons. The sludge is simply pumped out and carted away by market gardeners. As far as possible, surface water is kept out of the sewers. Several portions of the district not yet connected with the sewerage system. Offensive emanations arise from sewers, due to defects in drains (sewers ?), inadequate flushing and ventilation. The disposal of the sewage of Over-the-Gates is a difficulty still unsolved. The collection of house refuse is done by the Council and admits of improvement.

BRAINTREE, U. The sewage, with some storm water, flows by gravitation to the south of the town, where it is collected in tanks and pumped on to about 24 acres of land, and dealt with by broad irrigation.

BRIGHTLINGSEA. Midden privies abound. Few water closets. Several open ditch sewers. Some glazed pipe sewers were laid seven or eight years ago, and discharge their contents upon the foreshore, to the great danger of the oyster layings in the vicinity. Plans are being obtained for a proper system of sewerage. Scavenging and refuse disposal, no details.

BUCKHURST HILL. The sewers here take the storm water also. The sewage flows by gravitation to the outfall below the Railway Station, and, after being dosed with alumino-ferric, it flows through a series of small tanks, and finally before being discharged into the Roding is passed through rough filters of coke breeze and burnt clay. About one-fourth of the district is connected with the Woodford sewers. The sludge is mixed with house refuse and disposed of as manure. The treatment does not give satisfactory results. Nearly every house has a w.-e. The sewer ventilation has been recently improved by the erection of shafts, and the Medical Officer of Health says the results have been so satisfactory that their number should be largely increased.

Scavenging and refuse disposal. No details.

CLACTON. A complete system of sewerage recently completed. Sewage flows by gravitation out to sea. House refuse, in previous reports, is said to be removed by a contractor, and the adoption of movable ash-pits was advocated.

CHELMSFORD, U. The sewage is conveyed by gravitation, and disposed of by broad irrigation upon an extensive farm in Springfield. The following parishes in the Rural District are sewered and connected with the Chelmsford system:—Great Baddow, Springfield and Widford.

Refuse disposal. By the Town Council. Said to be fairly satisfactory. The refuse is disposed of in tips.

CHINGFORD. Much subsoil water said to enter sewers and the tank at the pumping station. Flow from low level sewers has to be pumped into the higher system. Sewage then flows by gravitation to outfall, where it is either passed directly upon the land or first dosed with alumino-ferrie and allowed to settle in tanks. The mud is pumped into shallow pits and then carted upon the land. The farm consists of 12 acres, but only nine acres are usable. Some sewage is taken in dry weather by an adjoining farmer. The effluent runs into the Ching Brook. The results are not uniformly satisfactory. The nuisance arising from the Woodford and Buckhurst Hill sewage outfall into the Ching has not been so serious as formerly, a sluice gate having been fixed across the Ching below the effluent out-fall from the farm for the purpose of periodically flushing the brook during warm dry weather. The pollution of the Ching near the Hatch has been diminished, but not entirely prevented. A system of sewers here would entail a heavy expenditure, since there is no fall, and pumping would have to be resorted to.

Scavenging. This is done by a contractor, who is entitled to charge 3d. for each lot of house refuse removed. This is very unsatisfactory arrangement and a source of "vexation of spirit to the unfortunate sanitary inspector."

COLCHESTER. There are  $12\frac{1}{2}$  miles of sewers in the Borough. At the sewage works the sewage is treated with lime and sulphate of alumina, and allowed to settle in tanks. The average flow of sewage is nearly one million gallons per day. The sludge is pressed into cakes, of which nearly 10 tons are produced daily. Nearly half this is sold, the remainder is given away. The effluent passes into the river. The Medical Officer of Health says "The state of the river is occupying your (the Town Council) attention, and in spite of

the difficulties surrounding its speedy rectification, is on the way of being rendered free from the pollution which has hitherto contaminated its waters."

Seavenging and refuse disposal. Done by the Corporation. The manurial matters are sold. The Medical Officer of Health says "the emptying of dust bins and waste surface material at appropriate and early hours is greatly to be desired." "The deposits of waste manurial and other *materiel* in outlying parts of the Borough create much nuisance, and are dangerous to health and a source of annoyance to residents near and passers by."

EAST HAM. The sewage is treated at the outfall works with alumino-ferric, allowed to settle in tanks, and the effluent filtered and run into Barking Creek. The sludge is pumped into pits and when partially dry spread over the adjoining land.

Seavenging and refuse disposal. "The pail system for collecting dust from house to house once a week appears to work satisfactorily; there are now 10 horses and carts with their drivers with a foreman, five collectors and three men at the shoots employed at this work." Much trouble has been experienced with shopkeepers depositing trade refuse upon the highway.

EPPING, U. The contour of this locality has necessitated the provision of three separate sewer outfalls. Some subsoil water enters the sewers. The sewage is disposed of by broad irrigation, 32 acres of land being available at the principal outfall and nine acres at each of the others. Sewers are flushed at the manholes by means of penstocks. An extension of the sewers to certain outlying districts is now being considered.

Seavenging and refuse disposal. No details.

GRAYS. At the sewage works the sewage (dry weather flow is about 130,000 gallons a day) is treated with alumino

ferric and lime, and allowed to clarify in tanks. The sludge is pumped into beds of ashes in order to dry and apparently there is some difficulty in disposing of it.

Scavenging and refuse disposal. No details.

HALSTEAD, U. Sewage disposed of upon a small farm, a portion of which is laid out for intermittent filtration.

Scavenging and refuse disposal. No details.

HARWICH. Sewerage and sewage disposal. Scavenging and refuse disposal. No particulars.

ILFORD. The sewage is treated at the outfall works by the lime process. The effluent, after precipitation, is filtered through sandy soil upon which osiers are grown (1892) and finally finds its way into the River Roding.

Scavenging and refuse disposal. Undertaken by a contractor and not entirely satisfactory.

LEYTON. Separate drains for storm water. At the outfall the sewage is treated by Hanson's black ash process and allowed to settle in tanks. The sludge is afterwards pressed. There is a difficulty in disposing of it, and probably the cakes will be burnt in the new refuse destructor.

Scavenging and refuse disposal. Done by the District Council. A destructor has just been erected for burning all refuse.

MALDON, U. A portion of the town is sewered, and the sewage after subsidence in tanks flows into the Blackwater Estuary. The flushing of sewers is not satisfactory.

Scavenging and refuse disposal. No details. Certain sewers have been re-laid.

ROMFORD, U. The sewage flows by gravitation to a large farm where it is received in tanks and pumped on to the land. The effluent is discharged into the Rom.

Scavenging and refuse disposal. No details.

SAFFRON WALDEN, U. The sewage flows by gravitation to the outfall works where it is treated with alumino-ferric and settles in a small tank. The effluent, which is unsatisfactory, ultimately finds its way into the Cann. An extension of the sewers is desirable, but the Local Government Board will not grant power to borrow the necessary money until the system of sewage disposal is improved.

There is no public scavenging (1897).

SHOEBURYNESS. "A part of the district is drained into a main sewer which empties itself into the sea. The other has cesspools and earth closets. The contents of the latter are carted away to the outlying farms when necessary. The earth closets are emptied three times per week. The sewerage of the Cambridge Estate is being carried out."

SOUTHEND. This report contains a plan and full description of the sewerage works now being carried out. When completed there will be two systems—the Eastern Valley and Western Valley. Sewage from the low level sewers will be pumped into the high level systems. The sewage will be discharged into the Thames in such a manner as to reduce the risk of return with the rising tide to a minimum.

Refuse and refuse disposal. Refuse is removed by the Corporation officials. Moveable dust bins are being required for every house. The refuse is burned at some brick kilns and causes a nuisance. A destructor for burning it is about to be provided.

WALTHAM HOLY CROSS. Most of the main sewers have been down many years, and their construction does not meet modern requirements. To prevent deposits and repetition of blocked sewers more adequate flushing is necessary. The sewage is conveyed to a farm and disposed of by intermittent downward filtration, but the system "has not worked regularly and satisfactorily in the past." Separate drains are provided for subsoil drainage and rainfall. The sewerage of Lea Road is under consideration.

Seavenging and refuse disposal. Done by the Council's men, but is not systematic, and tons of refuse are allowed to accumulate on waste land. (1892 Report.)

**WALTHAMSTOW. SEWAGE FARM AND WORKS.**—A chemical treatment with precipitation of the sewage has been adopted in place of broad irrigation which had been the plan of dealing with the sewage for several years past. Though it is too early to form a decided opinion as to the efficiency of the new plan (Black Ash) of dealing with the sewage of our town, there is no doubt that up to the present it has been very satisfactory. The effluent shows a marked improvement on that of recent winter months.

**Collection of House Refuse.** Another sanitary improvement has been the substitution of the pail system of collecting house refuse, whereby such refuse is removed from the houses twice a week, for the old and most insanitary method of a fortnightly (often three weekly or monthly) removal of dust from dustbins. The refuse is sold to brickmakers.

**WANSTEAD.** Most of the storm water is carried away by special drains. Sewage flows by gravitation to a farm of 30 acres where it passes through small screening tanks then through large settling tanks and finally flows over the farm ultimately finding its way into the Roding.

**Seavenging and Refuse disposal.** Seavenging is done by contract, every house being visited once a fortnight. Refuse tipped in an old gravel pit and covered with earth.

**WOODFORD.** The sewage passes to two outfalls where it is treated with alumino-ferrie, allowed to precipitate in tank and the effluent flows over some land. About  $\frac{5}{8}$ ths. of the sewage goes to the Eastern Outfall and the effluent flows into the Roding, the remainder goes to the Western Outfall and finally finds its way into the Ching Brook.

**Seavenging and Refuse disposal.** No details.

WITHAM. The sewage flows by gravitation to a series of small settling tanks from which it passes to irrigate a farm of about 40 acres. The sludge is pumped out into pits and when sufficiently dry spread upon the higher portion of the farm. The sewage from the lower outfall sewer can only be treated on the low lying ground. The Medical Officer of Health says "The disposal of the sewage has been much more satisfactory during the past year, and the further prevention of storm water passing into the sewers, will render it still easier to deal with."

Scavenging and refuse disposal. Regular removal of house refuse by the District Council's carts and men.

WALTON. The present system of sewers is insufficient and an engineer has submitted plans for completely sewerizing the town, providing a better outfall, etc. The outstanding loans are so great that the District Council hesitates to still further increase the indebtedness of the town.

The system of refuse disposal admits of improvement. The Medical Officer of Health says "I should like to see all ashpits done away with and the house refuse daily removed by small boxes placed on the street early in the morning and emptied as the cart passes round." This would be less costly than the present system and prevent filthy collections in the back yards of the houses.

Some account of the sewerage arrangements in vogue in the Rural Districts was given in the County Report for 1892. In the reports for 1896 there are numerous references to insanitary conditions arising from improper disposal of sewage or slop water.

BILLERICAY. "A more thorough and comprehensive system of drainage and a public water supply would be a great advantage to the town of Billericay." The sewers have been laid bit by bit. In many parts there are no sewers.

Plans have been submitted for the drainage of Shenfield and Hutton, but the scheme is a costly one. The present

sewers discharge into a small watereourse and create a nuisance in dry weather.

**CHELMSFORD.** The village of Writtle is in a grossly insanitary condition from the lack of an efficient sewerage system. If the Local Government Board will consent to the formation of a special drainage area the provision of sewers and of a public water supply would be proceeded with forthwith. A public scavenger has been engaged for Springfield.

**EPPING.** A scheme has been decided upon for the sewerage of Woburn Avenue and Theydon Green.

**HALSTEAD, No. 1.** A sewerage scheme for Earls Colne was proposed by the District Council but the local opposition has caused it not to be proceeded with.

**LEXDEN AND WINSTREE.** In last year's report the Medical Officer of Health commented on the necessity for works of drainage and water supply for Wivenhoe, Rowhedge and Dedham and West Mersea. "There appears to be a reluctance to carry out these works by the usual way of loan, and proposals have been made of only spending small sums, which, I presume, it is intended to pay off. From my long experience in sanitary work, I am of opinion that this is the most undesirable and the most expensive way of doing business, as not only are the essential works not done in such a manner as to benefit the place in any degree, but the cost is entirely borne by the present inhabitants, and the future ones, who will derive the most benefit, are left free from contributing their share."

**MALDON.** The sewerage system at Tolleshunt D'Arcy has been completed. The Tillingham sewage farm has been deep drained. The sewage precipitation works at Burnham have been improved. A public scavenger has been engaged for Southminster.

**ONGAR.** The drainage of Blackmore is generally deficient, and the water supply unsatisfactory. The drainage of Moreton and Abridge has been improved. A scheme for scavenging Chipping Ongar is under consideration.

**ORSETT.** Sewers have been laid for the houses around Tilbury Docks and connected with the Grays system. In other parishes there is no proper sewerage, and such is required in several of the more populous districts. The cesspits at West Thurrock and parts of Stifford are a menace to the purity of the South Essex Company's water.

There is no public scavenging.

**ROCHFORD.** Drainage improvements are chronicled in Canewdon, Rayleigh, Hadleigh, and Rochford. The scavenging of Rochford requires improving, "the house refuse should be more frequently removed and at regular intervals." A new drainage system is required for Great Wakering. Leigh, which shortly becomes an Urban District, is rapidly growing "and improvements are urgently needed in connection with the disposal of sewage."

**ROMFORD.** The sewerage of Dagenham, Rainham, and Hornchurch is most unsatisfactory. Arrangements should be made for scavenging the more populous parishes.

**TENDRING.** The defective sewerage arrangements at Great Bentley have been reported a *great number of years*, but as yet nothing has been done. At Elmstead the nuisances arising from foul ditches was so great that the Surveyor prepared plans for a sewer, but the local opposition has prevented anything further being done. A sewerage scheme has been decided upon for Frinton. At Manningtree the sewer outfall is unsatisfactory. At Weeley the sewers laid last year have not proved satisfactory and will have to be altered.

### REFERENCES TO WATER SUPPLIES.

This very important subject is worthy of a special report, but as the information given in the Annual Reports of the Medical Officers of Health would require supplementing very considerably, it must be deferred for the present. The following are the more important references made to water supplies in the 1896 reports :—

**BRIGHTLINGSEA.** There is a Local Company drawing water from the subsoil in the Park. The supply is pumped to the higher portions of the town, but the lower portion is supplied by gravitation. The works have just been enlarged, and the officials state that they now have sufficient water to supply the whole town. There are two public springs and certain private surface wells.

**BUCKHURST HILL.** The East London Company's water is said to be satisfactory in quality, but the inconstancy makes the quantity unsatisfactory. There are many shallow wells which ought to be closed.

**CLACTON.** The private Company was unable last season to provide sufficient water, and has been trying, without success, to obtain additional water from shallow wells. A proposal to tap the Ardleigh gravel beds is opposed by the Medical Officer of Health. The Urban District Council are considering the desirability of purchasing the works.

**CHELMSFORD.** The supply is in the hands of the Town Council, and is derived from three sources—a deep well and two springs. The supply is limited and intermittent. The outbreak of Typhoid Fever caused the Medical Officer of Health to suspect the water supply, and the Inspector to the Local Government Board, Dr. Reece, advises that "The Town Council should endeavour to provide their district with a constant supply of water wholesome in quality and sufficient in quantity, and should take steps to re-lay such mains as may

reasonably be suspected of being in a damaged condition. If cisterns are retained in the houses, there should be a separate cistern or flushing tank for the water closets."

**COLCHESTER.** The new pumping plant is working most economically and satisfactorily, and a constant supply is now given to the Borough. During the year Deacon's meters have been attached to the mains to localise waste, and have effected a saving of 200,000 gallons every 24 hours.

**EAST HAM.** Supplied by East London Company. During some portions of the year the supply was limited to a few hours daily, and more especially was this noticed in the month of July.

**EPPING.** Supplied by the Herts and Essex Company. Many houses have not the water laid on and use surface wells. One of the worst of these wells in the centre of the town supplies 18 houses, and "during the summer months it usually fails, leaving the people then entirely without water."

**GRAYS.** Supplied by the South Essex Company. The water is very hard. "The supply has been more or less constant, but for some months it was cut off early in the evening and not turned on again till morning, causing "much trouble and bother."

**HALSTEAD.** Supplied from a deep well belonging to the town. There is no water supply to the Tydings Hill School, and the tap supplying Holy Trinity Schools is in the corner of the urinal enclosure.

**HARWICH.** Several wells were closed during the year, and water from the Tendring Hundred Company's mains laid on.

**LEYTON.** In June the water supply was cut off from 9 a.m. to 6 p.m., and in July it was curtailed to less than a six hours' service.

MALDON. A private company supplies the town from two deep wells. The supply is "hardly sufficient for the requirements of the town during the summer months."

SAFFRON WALDEN. The cottages at Seward's End still depend upon pond water.

SHOEBURYNESS. During the year the water from the Garrison deep well was laid on for the supply of a number of houses. A public supply has since been completed the source being a deep well.

SOUTHEND. Supplied by a private company. The Medical Officer of Health says, "The advantage of the water supply being under the control of the Public Authority is generally recognised and is a question I think the Council should consider."

WALTHAM HOLY CROSS. Supplied by the East London Company. It is said to have been excellent in quality and constant in quantity. 3,010 yards of new mains have been laid during the year. "There yet remains 759 houses from a total of 1,256 without water, or supplied from questionable sources." "This all important question" is not receiving sufficient attention.

WOODFORD. A number of tube wells have been condemned and the cottages have been connected with the East London Company's mains.

WALTHAMSTOW. The Medical Officer of Health reports:—  
"In the early part of this year I obtained permission from the Sanitary Committee to have samples of water submitted for analysis for our own information. Finding that on several occasions the samples were of an unsatisfactory nature, I asked that some samples might be taken in accordance with the suggestion of the Local Government Board, and that

24 hours' notice be given to the Water Company of our intentions. A place and time were fixed by us for taking the samples, but no representative of the Company put in an appearance. Twenty-four hours were evidently too short a notice. However, at the request of the Company another date was fixed and a conjoint sample was taken. The sample taken by us was submitted for analysis and found to be of an inferior quality.

“ Situated as we are, and entirely at the mercy of a powerful Company, it is only natural that we should look to the Local Government Board for assistance and support in a matter which so materially affects the health of a large community. Having complied with the suggestion made to us by the Local Government Board, having given notice to the East London Water Works Company of our intention of taking samples of their water for analysis, having taken a sample in conjunction with a representative of the Company, we felt confident that on approaching the Central Authority we would obtain that support we have so long needed and have so earnestly looked for. The reply we have received is an insult to intelligence. If your officers are so utterly incompetent that they cannot take a sample of water for analysis and so dishonest that they use dirty bottles for the purpose, it is high time that the Local Government Board complied with the request of your Council to have samples of the water supplied to this district regularly analysed as within the Metropolitan area.

“ It is all very well for the Water Company to contend that the water at their works is of a good quality, but we have to deal with it as delivered to the consumers, and not as it leaves the works.

“ Owing to the deficient rainfall in the early months of the year the amount of water supplied was strictly

limited, this caused a great deal of inconvenience in those houses where there was not sufficient means of storage.

"From a sanitary point it is a great calamity to be limited to so meagre a supply as a large section of the community had to be contented with during the summer months. Not only was there not a sufficient quantity for ordinary domestic purposes, especially in the tenement houses where one small cistern had to do duty for two or more families, but for sanitary purposes also was the want of water greatly felt, drains and sewers remained unflushed, thus endangering the public health.

"The water mains themselves were but seldom flushed out, and the water delivered to the houses was frequently turbid with the deposits of iron rust and other solid matters which had collected in them."

**WALTON.** Since February 1st the town has been entirely supplied by the Tendring Hundred Company, but the mains are said to be still connected with the old wells.

#### *Rural Districts--*

**BELCHAMP.** The parishes of Walter Belchamp, Otten Belchamp, Henny, Borley, and Alphamstone are badly supplied with water. In consequence of a communication from the County Council, a sub-committee was appointed to consider the matter, but nothing has been done.

**BILLERICAY.** The deep well at Wickford has been improved, and now yields about 3,000 gallons in the 24 hours, or six gallons per head of population. The Chelmsford Rural District Council intend to lay mains to Runwell, and the Medical Officer of Health says :—"If so, it would be an easy matter—and not costly—to at any time carry it on to Wickford." Slyee Gate, South Green, Laindon and Basildon, and the town of Billericay are badly off for water. In Billericay "there is

no supply for watering the streets or for flushing the street drains, and the latter are in consequence, in summer, often very offensive."

**BUMPSTEAD.** The new well at Helions Bumpstead had to be deepened during the year. So much foul air accumulates in it that this was a matter of considerable difficulty. Two men were suffocated therein in 1895.

**CHELMSFORD.** The supplies in several villages have been improved. Permission has been obtained from the Local Government Board to extend the Danbury mains to the extreme southern boundary of the district, at a cost of £4,000. Compulsory powers have been acquired for purchasing other springs on Danbury Hill. A scheme has been submitted for increasing the supply to Ingatestone. Estimated cost, £670. The Writtle scheme is in abeyance on account of the objection of the Local Government Board to form a special rateable area.

**EPPING.** Rye Hill is dependent upon ponds which usually fail in summer. In districts where the Herts and Essex Company's mains are laid, the Authority has not compelled the owners of property to connect therewith, "even in some cases where the houses may be said to be entirely without water." "The Herts and Essex Company are not liable for a constant supply, and all houses should, therefore, be provided with storage cisterns."

**HALSTEAD, No. 1.** The supply provided by Mr. Reuben Hunt for Earls Colne has been cut off, and the village is again dependent upon its shallow wells.

**HALSTEAD, No. 2.** Samples of water from all the public wells have been analysed by the County Medical Officer. Two were reported unfit for domestic purposes, and the use of water from these sources has been discontinued. Wells have been sunk and pumps fixed at Meadow Field and New England, Sible Hedingham, and at Gainsford End, Toppesfield. Portions of Sible Hedingham, Toppesfield, Stambourne, and Tilbury are still badly supplied with water.

LEXDEN AND WINSTREE. *Vide* section on sewerage. Many parts of this district require improved and more abundant water supplies.

MALDON. The supply to Burnham is being improved by driving a series of tube wells. These will be connected with the present rising main, and it is expected that the yield will be considerably augmented.

ONGAR. "The water supply is chiefly from wells, most of them shallow, and many of them open, ponds, streams, and in some cases ditches, Abridge being the only instance where the supply is from a public source."

ORSETT. Several parishes are supplied by the South Essex Company. At Horndon-on-the-Hill water is carted to the village and sold at  $\frac{1}{4}$ d. per pail. Laindon Hill depends upon a spring, "in what is no more than a pool or pond, and consequently liable to pollution from surface water." Steps have been taken to enclose this spring and make it fit for use for drinking purposes.

ROCHFORD. The supply of water to South Benfleet is most inadequate. Many cottages at Hull Bridge depend upon a private well at a public-house. At Rochford serious attempts are being made to provide a public supply.

ROMFORD. The South Essex Company's mains ramify through most of this district, but some of the more thinly-populated parts are badly supplied by wells, ponds, etc.

SAFFRON WALDEN. A well has been sunk at Clavering to a depth of 105 feet. (Boulder clay 48 feet, chalk 57 feet.) The water level is 98 feet from the surface. Cost, £100 14s. 0d. Several parish supplies have been improved. Better water supplies are needed for the parish of Langley and the south end of Newport.

TENDRING. The Tendring Hundred Water Company's mains ramify through many parishes in this district. Great

trouble is frequently experienced to get the water laid on to the cottages on account of the objections of the owners.

SUBJECTS TO WHICH SPECIAL REFERENCES ARE MADE NOT INCLUDED IN THE PROCEEDING SECTIONS.

*Urban Districts—*

BARKING. Certain of the watercourses near the town are liable to become offensive during the summer. "The Loxford Brook, the Roding itself, and the watercourse Over-the-Gates, having a connection with the East Ham sewerage scheme are especially dangerous."

BUCKHURST HILL. It is suggested that tubercular diseases (the chief of which is Phthisis) should be added to the list of notifiable diseases, and the Medical Officer of Health has issued and circulated a report on "Consumption" with suggestion for its prevention.

CLACTON. A cemetery is much needed here, as the churchyard is believed to be more than full.

CHINGFORD. The Building Bye-laws have received the sanction of the Local Government Board.

EPPING. A complete code of Bye-laws now await the Local Government Board's approval. The Notification of Infectious Diseases Act has been adopted, the Infectious Diseases (Prevention) Act is to be adopted, and application has been made to the Local Government Board for all the powers of the Public Health (Water) Act, 1878.

GRAYS. Great nuisances arise from the unloading of foreign manure at the Town Wharf. "As foreign animals' dung it is under the control of the County Council, but the regulations of the County Council on the subject are openly disregarded."

**HALSTEAD.** During the year a conviction was obtained for selling diseased pork.

**ILFORD.** In October Measles was added to the list of Infectious Diseases requiring notification.

**HARWICH.** A code of Bye-laws has been adopted "which must exert a favourable influence on the health of the inhabitants," "most especially those relating to the erection of new buildings."

**MALDON.** Hand-flushed water closets are a great nuisance. "The Council should insist upon the owners providing proper flushing tanks." Nuisances from pig-styes. With few exceptions the styes are in a filthy condition, not well constructed, not paved nor drained." A lot of Norwegian herrings consigned to a local fishmonger were condemned and destroyed. Disinfection of infected premises not efficient, and many things have to be destroyed which could be disinfected by steam.

**ROMFORD.** Hand-flushed closets strongly condemned. The Medical Officer of Health says:—"I have in previous reports alluded to the facilities existing for the escape of sewer gas, caused by the absence of a proper system of flushing water closets, a defect existing in nearly all the cottage dwellings in Romford.

**SOUTHEND.** This report contains sections referring to the Bacteriological diagnosis of Diphtheria, the use of anti-toxin, the probable causes of Typhoid Fever, the analysis of subsoil from near defective sewers and drains, the removal of manure and offensive matter (condemning such removal during the day), the laying of house drains, back passages, combined drains, etc., etc.

### REPORTS OF INSPECTORS OF NUISANCES.

These have been already indirectly referred to. Special attention may be drawn to the interesting results recorded in certain districts where careful inspections are being made and the results tabulated.

					Percentage of houses in which sanitary defects were discovered.
East Ham	...	...	...	...	80
Colchester	...	...	...	...	85
Leyton	...	...	...	...	76
Southend	...	...	...	...	75
Walthamstow	...	...	...	...	65

There are no reasons for believing that these districts are worse than others from which such details are not obtainable. A comparison of the figures given in the subjoined summary of Inspectors' reports will shew that very unequal activity is displayed by the Inspectors in different districts. Of course, before drawing conclusions, the relative populations must be taken into account.

Systematic and efficient house-to-house inspection, combined with a determination on the part of the Sanitary Authorities to have all nuisances detected abated, would do more than anything else to improve the sanitary condition generally of the County.

No inspectors' reports have been received from the following districts :—

*Urban*—Braintree, Chelmsford, Harwich and Romford.

*Rural*—Billericay (Western), Rochford, Stanstead and Tendring.

The following districts have supplied special reports of the work done by the Sanitary Inspectors embodied in the reports of the Medical Officers of Health :—

Colchester : Inspector, Mr. Thos. Wells. East Ham : Chief Inspector, Mr. Joseph G. Banks. Leyton : Chief Inspector, Mr. H. Miller. Walthamstow : Chief Inspector, Mr. W. W. West.

The reports furnished by these gentlemen are all interesting and very valuable supplements to those of the Medical Officers of Health. The Ilford report by Inspector F. W. King is published separately. He refers to complaints made about the slipshod method of removing house-refuse on the part of the contractor. Nuisances from sewer manholes. Want of a proper water supply to cottages in Bennett's Castle Lane, etc.

## URBAN SANITARY DISTRICTS.

SUMMARY OF REPORTS OF SANITARY INSPECTORS.



# RURAL DISTRICTS.

## SUMMARY OF REPORTS OF SANITARY INSPECTORS.

	Bedeharp (D)	Grit (District).	Bredinbreæ.	Dumhow.	Eppinge.	Halsfield No. 1.	Texden and Winstree.	Middleton	Orsett.	Roeheford.	Staintead.	Walden.	Tendring.
1. Complaints received	1	12	15	10	225	10	119	8	29	21	57	2	34
2. Nuisance detected	20	58	10	38	250	184	... 57	18	210	161	104	226	16
3. Nuisances abated	50	70	10	46	230	184	... 57	35	210	104	3	238	142
4. Notices served	42	30	11	39	273	68	309	10	25	57	1	231	134
5. Summonses taken out	0	1	1	...	...	3	...	...	1	1	...	216	533
6. Convictions	6	1	1	...	...	3	...	...	1	1	...	3	80
7. Premises inspected	160	150	562	26	2500	...	859	217	52	748	523	4	...
8. Lodging-houses inspected	0	0	...	...	1	...	...	...	52	52	453	290	600
9. Slaughter-houses inspected	1	3	1	...	19	11	20	6	5	11	8	0	0
10. Bakewholes inspected	3	3	10	...	29	28	20	10	16	...	14	...	7
11. Dairies and Milk Shops inspected	...	...	2	...	...	35	32	4	9	6	...	12	...
12. Cow-sheds inspected	...	...	4	7	...	54	49	9	6	...	17	14	...
13. Workshops inspected	...	...	...	...	...	...	...	...	...	0	0	...	...
14. Filthy houses cleansed, see 46. Public Health Act, 1875	...	...	...	...	...	...	...	1	1	...	13	27	6
15. Houses disinfected	...	...	29	9	20	3	54	45	102	3	3	37	40
16. Overcrowding abated	...	...	3	3	1	4	22	2	6	3	5	3	11
17. Houses placed in habitable repair	...	...	...	...	...	...	...	4	72	6	1	21	16
18. House closed	...	...	...	...	...	...	...	2	...	16	2	1	...



## PART II. PORT SANITARY DISTRICTS.

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### COLCHESTER.

Medical Officer of Health—C. A. S. LING, M.R.C.S., etc.

During the year 515 vessels entered the Colne, and all were inspected. A list of vessels is appended which received special attention. No case of infectious disease was reported or discovered. The floating hospital is said to be well kept and aired, and to be ready for any emergency.

### HARWICH.

Medical Officer of Health—HAROLD GURNEY,  
L.R.C.P., L.R.C.S.

One case of Scarlet Fever was imported. The patient was removed to the floating hospital and the vessel disinfected. The small hospital is said to have been repaired and put into a seaworthy condition and "the new ship which is still lying in Ipswich dock can be brought down to this port in a few hours."

### MALDON.

Medical Officer of Health—E. P. GUTTERIDGE, M.R.C.S.

951 vessels entered the port, of which 21 came from foreign ports. All were inspected. In a few instances there was a want of cleanliness and the drinking water wanted changing more frequently. No case of sickness was discovered. The unloading of London Manure at the Corporation Wharf and elsewhere frequently creates a serious nuisance and the Medical Officer urges that Bye-laws should be adopted to regulate the unloading and carting of the filth. "In former years" he says "I have had cases of Diphtheria which I attributed to this cause and this year a case occurred after the landing of a cargo."

## Urban Sanitary Districts . BARKING.

Medical Officer of Health—C. F. FENTON, L.R.C.P., M.R.C.S.

Population, 1891 ...	...	...	14,301
,,      1896 ...	...	...	16,500
Deaths registered in the district...			250
Corrections     ...     ...	...	+	33
		1896.	Mean of 6 years 1890-5.
Corrected Death-rate     ...	17·15	...	18·2
Zymotic Death-rate     ...	1·8	...	3·6
Infantile Mortality ...	149	...	147
Birth-rate     ...     ...	42·3	...	41·6
Zymotic Case-rate ...	15·0	...	11·1

The Death-rate in this district remains continuously much above the average for the Urban districts in the County. The Infantile mortality also is excessive. The Medical Officer of Health thinks that the measures which have been taken to rectify sanitary defects will appreciably reduce the number of deaths of infants and diminish the prevalence of summer diarrhoea. An epidemic of Typhoid Fever occurred in the Autumn and a Special Report was sent to the Local Government Board, but no copy appears to have been furnished to the County Council. Thirty-four cases occurred. No facts were discovered implicating the water or milk supply. The Medical Officer of Health tabulates the 'probable causation' as under :—

Sanitary defects     ...	26	
Eating shell-fish     ...	8	N.B.—Some of the cases are
Bathing in polluted		included under more
water     ...     ...	1	than one heading !
Doubtful     ...     ...	4	

More or less gross sanitary defects appear to have been found in nearly every infected house. Most of the cases were removed and treated either in the Isolation Hospital or in one of the London Hospitals. Several distinct outbreaks of Scarlet Fever occurred during the year and the Hospital accommodation was speedily overtaxed.

*Isolation Hospital.* There is an iron structure at Upney, which apparently is not sufficiently large, since the District Council are now discussing a proposal for securing a site for convalescent cases of Scarlet Fever in conjunction with other Authorities. The District Council have agreed with West Ham Corporation for the reception and treatment of cases of Small-pox arising in the district, at the Hospital now in course of erection at Dagenham.

*Improvements chronicled.* The sewers were examined, and where found defective are being re-laid and ventilated. The collection of house refuse is now effected by the Council's carts and men, and is "well done." Some old houses in Linsell's Court have been pulled down. The fish-offal nuisance has been stopped. Systematic inspection appears to be carried out and the Sanitary Inspector's Report shews that a very large number of nuisances were detected and their abatement secured.

*Improvements required.* (a.) A more thorough system of ventilating house-drains; (b.) The Loxford Brook, the River Roding and the Watercourses Over-the-Gates having a connection with the East Ham sewerage scheme may become a source of danger to the health of the town during the summer months, especially if the season is dry. Offensive emanations from the sewers still continue. Creekmouth is not connected with the general sewerage system, and the disposal of the sewage of Over-the-Gates is a difficulty still unsolved.

To the list of industries in the district must now be added an India Rubber Factory and a Tar works. No complaints have been received during the year from the Sheep Dip Works.

## BRAINTREE.

Medical Officer of Health—P. R. STEVENS, L.R.C.P., M.R.C.S.

Population, 1891 ...	...	...	5,303
,, 1896 ..	...	...	5,400
Deaths registered in the district			93
Corrections	...	...	+ 9. —0

	1896.		Mean of 6 years 1890-5.
Corrected Death-rate	18.8	...	16.3
Zymotic Death-rate	1.3	...	1.3
Infantile Mortality	137	...	101.0
Birth-rate	27.0	...	23.0
Zymotic Case-rate	6.6	...	2.5

Scarlet Fever was prevalent during the year, but only one death was recorded therefrom. A Berthon hut was borrowed from the Rural District Council and used as an Isolation Hospital. A provisional order has been obtained forming a Joint Hospital Board for the Braintree Urban and Rural Districts and the Medical Officer of Health "trusts that the erection of an Isolation Hospital will be proceeded with without any undue delay."

Certain of the cottages in the town are damp and insufficiently ventilated, but it is hoped that by strictly enforcing the Bye-laws these defects will not occur in new houses.

A public bathing place is contemplated if a suitable site can be acquired.

There is no report from the Sanitary Inspector.

## BRIGHTLINGSEA.

MEDICAL OFFICER OF HEALTH—H. S. COOPER,  
M.R.C.S., L.R.C.P.

Population, 1891 ... ... ... 3,882

„ 1896 ... ... ... 4,181

Deaths registered in the district 56

Corrections—None recorded.

	1896.		Mean of 5 years 1891-5.
Un-corrected Death-rate	13.4	...	15.95
Zymotic Death-rate	—	...	—
Infantile Mortality	—	...	—
Birth-rate	32.3	...	—
Zymotic Case-rate	—	...	—

Brightlingsea only recently became an Urban District, and the Medical Officer of Health only commenced his duties with the last quarter of the year. The mortality statistics for the year, therefore, are incomplete. During the autumn "there has occurred an unusually large number of cases of sore-throat, many of them of a diphtheritic character, for which I consider our present midden system a good deal to blame."

*Sewerage.* Some open ditch sewers are still in existence. Glazed-pipe sewers were laid some seven or eight years ago over a large portion of the town. These sewers discharge directly into the creek. There are few waterclosets at present. Most of the houses have midden privies.

*Water Supply.* The Brightlingsea Water Company supplies most of the town from a surface well in the Park, besides which there is a public pump and a public spring. Some houses in the higher part of the town still depend upon shallow wells.

*Prospective Improvements.* The Medical Officer of Health points out the sanitary defects of the town under various headings, as under, "to suggest the lines upon which improvement might proceed as opportunity offers."

*Sewerage.* An improved system of sewage disposal which will prevent the pollution of the foreshore is urgently needed, and an engineer has been engaged to submit a scheme. When this is completed the midden privies should be abolished and w.-e.'s and ash-boxes substituted.

*New Buildings and Streets.* Bye-laws should be adopted at the earliest possible moment for regulating the laying out of streets and erection of buildings.

## BUCKHURST HILL.

Medical Officer of Health—A. AMBROSE, M.D., D.P.H.

Population, 1891 ...	...	...	4,130
,,      1896 ...	...	...	4,870
Deaths registered in the district			64
Corrections	... + 3	— 5	

			1896.
Corrected Death-rate	...	...	12·73
Zymotic Death-rate	...	...	2·7
Infantile Mortality	...	...	81·3
Birth-rate	...	...	25·3
Zymotic Case-rate	...	...	6·0

The above figures differ somewhat from those given by the Medical Officer of Health since he has calculated his upon the basis of the 1891 census (population 4,130) instead of upon the estimated population in 1896 (4870). The high Zymotic death-rate is chiefly due to Whooping Cough which caused seven deaths during the year.

The district comprises an area of 899 acres, including about 150 acres of forest. The sub-soil is of clay, "having pockets of sand and gravel over its surface, the whole being on a considerable slope, affords excellent opportunities for drainage."

*Sewerage, etc.* The sewers receive the rain-water, and at the sewerage works the solids are precipitated, and the sludge mixed with refuse and disposed of as manure. The effluent is filtered through coke breeze and burnt clay. The system does not appear to be entirely satisfactory. Nearly every house has a w.-c., and this is in most cases supplied with water.

*Water Supply.* This is derived from the East London Company's mains, but the supply is "inconstant," and, therefore, unsatisfactory. There are many shallow wells which the Medical Officer of Health thinks should be closed.

*Housing of the Working Classes.* Generally satisfactory.

*Streams.* One of the two streams in the district receives the effluent from the Sewage Works.

"*Bye-laws* have been adopted relating to dairies, slaughter-houses, and nuisances."

*Systematic Inspection.* The Surveyor is also Sanitary Inspector. His inspections resulted in the discovery of 107 nuisances, all of which have been or are being dealt with. Dairies and milk shops appear to receive frequent inspection. Some ventilating shafts have been connected with the sewers and have acted so satisfactorily that the Medical Officer of Health recommends their more general adoption.

## CLACTON.

Medical Officer of Health—J. W. COOK, M.D.

Population, 1891 ...	...	...	3,584
„ 1896 ...	...	...	3,895
Deaths registered in the District			72
Corrections	...	...	+ 0 — 14
		1896.	Mean of 6 years 1890-5.
Corrected Death-rate	...	14·8	15·2
Zymotic Death-rate	...	1·8	2·2
Infantile Mortality	...	122·	102·
Birth-rate	...	35·6	30·1
Zymotic Case-rate	...	25·4	11·0

Dr. Cook has based all his tables upon an estimated population of 3,895, although he states that it might justly be put down at 5,000, if not more. The abnormally high birth-rate is accounted for by this low estimate of the population. Taken at 5,000, the death-rate would be 11·6 and the birth-rate 27.

Scarlet Fever was frequently introduced during the year, and from June to October a tent hospital was in continuous use. The Board School had to be closed for a short time on account of the prevalence of the disease amongst the scholars. Two successful prosecutions were instituted on account of the removal of infected persons.

*Isolation Hospital.* The Council has decided to proceed forthwith to provide a permanent Hospital.

*Cemetery.* An attempt to provide a Cemetery under the Burials Acts has had to be abandoned and it has been decided to proceed under the Interments Act. The matter is represented to be urgent.

*Water Supply.* The waterworks are in the hands of a private company, and the supply was very deficient last season. The promotion of a Bill in Parliament to acquire the right to purchase the works appears to be contemplated. The Medical Officer of Health thinks that an additional supply could be obtained in the district.

*Inspection.* The summary of work done by the Sanitary Inspector, who is also the Surveyor, shews that no complaints were received, and that 45 nuisances were detected and abated.

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### CHELMSFORD.

Medical Officer of Health—H. W. NEWTON, L.R.C.P.,  
M.R.C.S., D.P.H.

Population, 1891 ...	...	...	11,008	
„ 1896 ...	...	...	11,700	
Deaths registered in the District			184	
Corrections ...	...	— 23 + 0		
		1896.	Mean of 6 years 1890-5.	
Corrected Death-rate	...	13·76	...	15·4
Zymotic Death-rate...	...	2·56	...	1·6
Infantile Mortality ...	...	118·	..	103·
Birth-rate ...	...	25·3	...	25·9
Zymotic Case-rate ...	...	8·6	...	9·3

Although Mr. Newton was only appointed Medical Officer of Health in October last he has been good enough to prepare a report for the whole year, thus avoiding a break in the statistical record. The Medical Officer of Health estimates the Zymotic death-rate at 1·8 per 1,000. This figure is arrived at by leaving out the deaths of elderly people from Diarrhoea. Such a course is unusual, and would render his returns not comparable with other districts.

Fourty-four cases of Diphtheria were notified; many were slight in character. In some cases the patients were not isolated at all. Out of 36 cases of Typhoid Fever notified, no less than 33 occurred in the South Ward. In the previous year out of 17 cases, 16 were in the same Ward. The water supply is suspected. (*Vide Local Government Board Report, pp. 13.*) The want of proper isolation accommodation was much felt. The drains in the South Ward were well flushed and disinfectants poured down." The outbreak occurred in July and August. In the early part of the year Measles and

Whooping Cough were very prevalent. "A weekly list of cases absent from School was furnished to the Medical Officer of Health and a great number were visited."

*Water Supply.* During the summer the supply was very limited, but in August, the Surveyor, by an alteration in the pumping was able to increase the allowance from about 12 gallons. to 20 gallons. per head per day. "The present intermittent supply is full of dangers." There are still many shallow wells in use.

*Isolation Hospital.* Consists of a pair of cottages with four rooms available for patients. These can barely accommodate four patients as the two front rooms have only a cubic capacity of 1,036 feet and the back rooms 650 feet. That the accommodation is 'inadequate' is a very mild expression. A disinfecting apparatus is recommended.

*Inspection.* Many nuisances have been detected and abated where possible. No action has been taken under the Housing of the Working Classes Act. Many of the yards in Moulsham are in a very insanitary condition. Many water closets are without a water supply. The "Seavenging is carried on fairly satisfactory and the refuse is disposed of in tips." There is no report from the Sanitary Inspector.

## CHINGFORD.

Medical Officer of Health—T. S. TAYLOR, M.D., M.R.C.S.

Population, 1891 ...	...	...	2,737
„ 1896 ...	..	...	3,412
Deaths registered in the district			37
Corrections	...	...	+ 2 — 1
		1896.	1895.
Corrected Death-rate	...	11·1	14·6
Zymotic Death-rate	...	2·05	3·7
Infantile Mortality	...	93·0	71
Birth-rate	...	25·2	25·6
Zymotic Case-rate	.	3·5	7·3

The Mortality statistics, the Medical Officer of Health thinks "bear cogent testimony to the natural healthiness of Chingford." In connection with certain cases of Diphtheria and Typhoid Fever sanitary defects were discovered in the infected houses, but others occurred in dwellings in which such nuisances were not discoverable.

*Hospital Accommodation.* There is an arrangement whereby patients are sent into the Hospital belonging to the Epping Rural District Council, but the Medical Officer of Health after visiting this says "in its present condition it is not very well adapted for the reception of Chingford cases, the accommodation provided being barely sufficient for the needs of the Epping Rural District alone." "At present the Urban District Council seem rather in favour of uniting their forces with those of Buckhurst Hill and Woodford and building a conjoint Hospital."

*Drainage.* The difficulty of excluding surface water from the sewage collecting tank at the pumping station has not yet been overcome. Improvements have been effected at the Hatch, but it is desirable that others be carried out. The Ching Brook has not been seriously affected during the year by the effluent from the Buckhurst Hill and Woodford Sewage Farm.

*Scavenging.* The system adopted, of each householder paying 3d. to the contractor for removing the house refuse, is not working satisfactorily. It is wrong in principle.

*Bye-laws.* The Bye-laws relating to new buildings and the regulation of slaughter-houses have received the formal sanction of the Local Government Board.

*Periodical Inspection.* Carried out both by the Medical Officer of Health and Inspector. The latter's report shews that 107 nuisances were detected and 109 abated.

## COLCHESTER.

Medical Officer of Health—G. BROWN, M.D.

Population, 1891 ...	...	...	34,559
,, 1896 ...	...	...	39,093
Deaths registered in the district			520
Corrections	...	— 12 + 0	

		1896.		Mean of 6 years 1890-5.
Corrected Death-rate	...	13·0	...	16·6
Zymotic Death-rate	...	·9	...	1·7
Infantile Mortality	...	132·	..	137·0
Birth-rate	...	25·7	...	28·1
Zymotic Case-rate	...	7·0	...	8·3

The statistics for the year present "a most satisfactory record." Sixteen cases of Typhoid Fever were notified, but in no case could the disease be attributed to oysters.

*Improvements effected.* Over 2,000 feet of new sewers have been laid. The Public Cattle Market has been thoroughly reconstructed. The water mains have been extended nearly a mile and old and worn out pipes have been replaced by new. The constant supply has been maintained with most satisfactory results. To localise and prevent waste Deacon's Meter System has been introduced. This has effected a saving of 200,000 gallons every 24 hours.

*Inspection.* The Sanitary Inspector's report is very complete and satisfactory. The following passage from his report is very significant. "I have tested the drains belonging to 208 houses with the smoke machine, and I have also applied the liquid test to drains where the smoke machine was not applicable, and *more than 85 per cent. of the drains or traps were found defective.* The Workshop Inspector was employed for seven months, and examined 998 premises occupied by outworkers and 58 workshops, in all of which premises tailoresses, military shirtmakers, dressmakers, milliners, tailors or boot and shoe makers were employed. Thirty-three premises required thorough cleansing, and in many others sanitary defects were found.

*Sanitary Requirements.* The state of the river requires further attention to render it free from pollution. A disinfecting apparatus is required and will shortly be introduced. Byelaws are wanted to suppress the cartage of filth through the streets during certain hours. A great number of houses are without proper water-troughing. The deposits of rubbish, manure, etc., near the town creates a dangerous nuisance. The fact that nearly 90 per cent. of the house drains are found defective proves that all require thorough and systematic

examination. Many newly erected houses are defective. (Either the Bye-laws are obsolete or not enforced).

With reference to the prevalence of Syphilis the Medical Officer of Health says, "the free trade in this disease requires some legislative interference."

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### EAST HAM.

Medical Officer of Health—A. W. BEAUMONT, L.R.C.S.

Population, 1891 ...	...	...	32,713
,, 1896 ...	...	...	55,000
Deaths registered in the Districts			707
Corrections ...	...	+ 22	— 0
	1896.		Mean of 6 years 1890-5.
Corrected Death-rate	...	13·2	14·5
Zymotic Death-rate...	...	2·4	2·7
Infantile Mortality ...	...	148·0	137·
Birth-rate ...	...	36·6	36·1
Zymotic Case-rate ...	...	9·8	10·5

This Urban district is increasing in population with enormous rapidity. The birth-rate is very high, and so is the infantile mortality. 542 cases of Infectious disease were notified, of which 267 were Scarlet Fever and 172 Diphtheria. Five cases of Small-pox occurred. The patients were sent to the Highgate Small-pox Hospital. All occurred in two houses. After removal of the patients the remaining occupants were vaccinated and no more cases occurred.

*Water Supply.* This is from the East London mains and the quantity delivered was limited, especially in July.

*Scavenging.* The pail system for collecting dust from house to house once a week appears to work satisfactorily.

*Housing of the Working Classes.* Many houses have been dealt with under this Act, and throughout the district the Cottages "are now in a fairly good condition."

*Systematic Inspection.* The Inspector's report shews that a very large amount of work has been done in his department. The general condition of the bake-houses is not satisfactory. "In many instances, under the trough is the dust bin, where the scrapings are allowed to remain until there is room for no more." "Although means for ventilation is provided, it is totally disregarded."

*Sanitary Requirements.*

Laundry and Disinfector for the present Hospital.

An Isolation Hospital for Diphtheria.

Better office accommodation for carrying out the work of the Sanitary Department.

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**EPPING.** (From March 31st, 1896.)

Medical Officer of Health—T. FOWLER, L.R.C.P.L.,  
L.R.C.S.I., D.P.H.

Population, 1891	...	...	3,318	
„ 1896	...	...	3,448	
Deaths registered in the District			49	
Corrections	...	...	— 19 + 0	
				1896.
Approximate Death-rate	...	...	...	11·6
Zymotic Death-rate	...	...	...	2·3
Infantile Mortality	...	...	...	103·
Birth-rate	...	...	...	30·7
Zymotic Case-rate	...	...	...	10·2

This Urban district came into existence in the month of April last, and the statistics are based upon the figures for the nine months, April to December inclusive. Several localized outbreaks of Diphtheria and Typhoid Fever occurred during the year; some of which were imported and others were connected with insanitary conditions. Nineteen cases were removed to the Rural District Hospital.

*Isolation Hospital.* The Rural District Hospital is used by arrangement. "This," says the Medical Officer of Health, "is defective as regards construction, and as it consists of only two wards it does not provide sufficient accommodation for

isolating more than one disease ; besides these objections, the system of employing trained nurses only as they are required, instead of a permanent staff has proved in the end to be very expensive. It therefore becomes a matter for the serious consideration of your Council to decide whether you will continue an agreement with the Rural Council to have your cases removed to the Road Street Hospital."

*Area.* The present Urban district is identical with the Epping special Drainage District, comprising portions of the three parishes, Epping, Theydon Garnon and Theydon Bois. The area is 1,956 acres. It includes the whole of the town of Epping and the hamlets of Coopersale and Ivy Chimneys. The rateable value is £13,860. The town is on an elevation extending as far as Buckhurst Hill. The natural drainage therefore is in two opposed directions. The London clay is exposed at Fiddler's Hamlet but elsewhere is thinly covered with gravel, sand and alluvium.

*Water Supply.* The Herts. and Essex Company's mains ramify through the district, but a large number of houses have not had the water laid on, and still use polluted well waters. One of the worst of these wells in the centre of the town supplies 18 houses.

*Sewerage.* There are two sewerage systems. One constructed in 1869 serves the North-west side, the second was constructed in 1894 especially for the St. John's Road estate. The South-east side including the new building estates of Kendal & Allnutt, together with the Hamlets of Ivy Chimneys and Coopersale is entirely without sewers. Many houses along the lines of the existing sewers are not connected therewith.

*Houses of the Working Classes.* Many cottages are in a deplorable condition, and there is a great scarcity of houses for the poorer classes. The result is that there is much over-crowding, and much ill-health due to the insanitary condition of the cottages.

*Periodic Inspections.* The results have been communicated in special reports. In consequence of these the district was, inspected by the County Medical Officer, and since then an engineer has been consulted and has prepared plans for

sewering the remaining portion of the district, and these plans are now being considered. The Inspector's report shews that many nuisances have been discovered and many abated.

*Improvements effected.* Much time has necessarily been taken in getting the various powers obtained for Epping by the Rural District Council transferred to the present Council. An application has been made to the Local Government Board to confer the whole of the powers of the Public Health (Water) Act, 1878, and the Infectious Diseases (Prevention) Act, 1890, upon the Council. A code of Bye-laws has been formulated. All possible precautions were taken to arrest the spread of Infectious Diseases. Certain houses have been represented as unfit for human habitation, but no proceedings under the Housing of the Working Classes Act have as yet been taken.

*Sanitary Requirements.* Completion of sewerage system. Abolition of polluted surface wells. Additional cottage accommodation. An isolation hospital.

### GRAYS.

Medical Officer of Health—S. H. SNELL, M.D., D.P.H.

Population, 1891 ...	...	...	12,087
,,      1896 ...	...	...	13,500
Deaths registered in the district			188
Corrections—None recorded.			

	1896.		Mean of 6 years 1890-5.
Uncorrected Death-rate	13·9	...	15·2
Zymotic Death-rate	2·0	...	2·9
Infantile Mortality	141·	...	131·
Birth-rate	32·	...	37·3
Zymotic Case-rate	11·1	...	11·8

In 1895 the population was stated by the Medical Officer of Health to be 15,500, and the statistics were based thereon. The population for the present year is taken as 13,500, and the mortality rates are based on this estimate.

The Infantile Mortality is one of the highest in the County.

Seven cases of Small Pox were notified, five of which were removed to the Isolation Hospital. Out of 44 cases of Scarlet Fever only three were removed, and of the 42 cases of Diphtheria notified not one was removed.

*Sewerage.* Some difficulty has arisen at the sewage works with reference to the disposal of the sludge deposited from the chemically treated sewage.

*Housing of the Working Classes.* Sixteen houses have been closed during the year.

*Water Supply.* The supply is from the South Essex Company. The water is very hard, and for some months the supply was intermittent.

The nuisance caused by the unloading of Foreign Manure at the Town Wharf is referred to elsewhere. Practically the whole of the district has been inspected by the Medical Officer of Health and Inspector. From the latter's report a large number of nuisances were detected and abated.

## HALSTEAD.

Medical Officer of Health—C. G. ROBERTS, M.B.

Population, 1891	...	...	...	6,056
", 1896	...	...	...	6,200
Deaths registered in the district				120
Corrections	...	...	— 16 + 0	
				Mean of 6 years
		1896.		1890-5.
Corrected Death-rate	...	16·6	...	17·1
Zymotic Death-rate	...	4·	...	1·7
Infantile Mortality	...	174·	...	96·0
Birth-rate	...	23·0	...	25·4
Zymotic Case-rate	...	9·6	...	8·9

Measles and Scarlet Fever have been very prevalent. School closure was general for the former disease. Seventeen deaths occurred, not from the Measles itself but from avoidable complications.

The sanitary arrangements at Holy Trinity Schools require immediate attention, and at the Tydings Hill School there is no proper supply of drinking water.

Sewer extensions in several directions are desirable.

A prosecution was undertaken against a person for selling diseased pork and a conviction obtained.

The Inspector's report shews that a large number of nuisances of various kinds were discovered and caused to be abated.

Houses in which infectious diseases have occurred are disinfected by the Inspector, and clothing, bedding, etc., removed for disinfection in the steam machine at the Hospital.

## HARWICH.

Medical Officer of Health—H. GURNEY, L.R.C.P., L.R.C.S.

Population, 1891	...	...	8,403
„ 1896	...	...	8,603
Deaths registered in the district			123
Corrections	...	... + 5	— ?
		1896.	Mean of 6 years 1890-5.
Corrected Death-rate	...	14·9	15·0
Zymotic Death-rate	...	·7	1·0
Infantile Mortality	...	134	133
Birth-rate	...	38·1	32·4
Zymotic Case-rate	...	2·0	10·0

The Medical Officer gives the Zymotic death-rate at ·2 per 100. This result is arrived at by ignoring the deaths from Diarrhoea. The district has been very free from the notifiable Infectious Diseases, only 17 cases having been reported during the year, but a widespread epidemic of Measles occurred in November and December.

Bye-laws relating to new buildings have been adopted.

“The sanitary condition of the district is very satisfactory.” “Slaughter-houses are in a good state and well kept, but the blood and offal continue to be thrown down the drains.” There is

no overcrowding. Very few privies are left, water closets having been generally substituted. Several wells have been closed during the year and water from the mains laid on.

No report from the Sanitary Inspector.

### ILFORD.

Medical Officer of Health—J. SHIMELL, L.R.C.P., L.R.C.S.

Population, 1891 ...	...	...	9,963
„ 1896 ...	...	...	18,000
(Does not include the Claybury Asylum & Barnardo's Homes)			
Deaths registered in the District			483
Corrections	...	...	— 301 + ?
		1896.	Mean of 6 years 1890-5.
Uncorrected Death-rate	...	10·11	... 13·1
Zymotic Death-rate...	...	1·0	... 2·3
Infantile Mortality ...	...	123·	... 127·
Birth-rate ...	...	27·5	.. 31·0
Zymotic Case-rate ...	...	15·6	... 10·7

This district includes the London Lunatic Asylum at Claybury with a population of about 2,450 and Barnardo's Village Home for Girls at Barkingside having about 1,000 inmates. The deaths of inmates of the Union Workhouse belonging to Ilford are not included in the above returns, hence the death-rate cannot be compared with those districts in which this correction has been made. According to the Medical Officer's estimates, the population has very nearly doubled during the last five years.

The Zymotic case-rate was very high, Scarlet Fever having been epidemic. A special report on an outbreak of Typhoid Fever was sent to the Local Government Board but no copy appears to have been sent to the County Council.\* Little reference is made to the sanitary condition of the district nor is it stated whether the insanitary conditions referred to in previous reports have been remedied. An isolation hospital is being erected. Measles was, in October, added to the list of infectious diseases requiring notification.

\* A copy has recently been received.

## LEYTON.

Medical Officer of Health—A. F. PESKETT, M.R.C.S.

Population, 1891 ..	...	...	63,106
,,      1896 ...	...	...	77,000
Deaths registered in the District			1,339
Corrections     ...	...	+ 46 —	416 (?)
		1896.	Mean of 6 years 1890-5.
Corrected Death-rate	...	11·8	...
Zymotic Death-rate ..	...	2·6	...
Infantile Mortality ...	...	138·	...
Birth-rate     ...	...	30·8	...
Zymotic Case-rate ...	...	11·8	...
			13·8

The district contains the Union Workhouse Schools besides several smaller public institutions. The necessary correction for deaths of inmates of the above has been made, but the Medical Officer of Health has also deducted 16 deaths which were due to violence. This is not usually done, but the effect upon the death-rate is comparatively trivial.

Scarlet Fever was very prevalent but was of a less severe type than in the previous year. An outbreak occurred in St. Agnes' Orphanage, the origin of which could not be traced. Diphtheria was much less prevalent than in 1895, and this disease also was milder in type. Diarrhoea caused 87 deaths, Whooping Cough 52, and Measles 20. The prevalence of the two former explains the high Zymotic Death-rate. Sixty-six of the deaths from Diarrhoea occurred during July and August and are attributed chiefly to the ignorance of parents, especially with regard to the necessity of keeping feeding bottles clean and sweet. No case of Small-pox occurred, but the Medical Officer of Health points out the danger arising from the presence of a very great number of unvaccinated children, and emphasizes the importance of the Vaccination Acts being rigidly enforced. The temporary isolation hospital, which was completed in October, was at once utilized. "Of the usefulness of the building there can be no question, but whether it is capable of dealing adequately with our infectious disease is a matter which time alone will show."

The house-to-house inspection has been continuous. Out of 3,666 houses examined, sanitary defects were found in 2,796 or in 76 per cent. On one road 21 houses were so bad that they were certified to be unfit for human habitation. They have since been placed in habitable repair. The Medical Officer of Health says "A very large amount of work has been done during the year by the Sanitary Department, and the appointment of assistants, early in the year, has been most beneficial, and I think that it is most important that the staff of this department should continue to be kept sufficiently large to cope with the increasing work caused by the growth of population." The Bye-laws relating to the Licensing of Slaughter-houses are said not to be sufficiently stringent.

Complaints of foul smells arising from the sewer ventilators indicate that more ventilating shafts are needed.

The collection of house refuse works satisfactorily, but more carts and men are required to cope with the requirements of the increasing population.

The dust destructor (Beaman & Dea's type) has been completed. It has eight cells, four only, of which, are at present used. Each cell will burn 24 tons of unscreened house refuse or 14 tons of mixed sewage sludge and house refuse per cell per day. Very little smoke issues from the chimney. Some of the heat is utilized for generating steam and driving a Dynamo to light the whole of the sewage works with electricity. New roads, not taken over by the Authority often becomes a nuisance from a sanitary point of view on account of the traffic to and from the new houses. The Council is advised to act more promptly and either take over the roads or compel the owners to keep them in repair.

## MALDON.

Medical Officer of Health—E. P. GUTTERIDGE, M.R.C.S.

Population, 1891 ...	...	...	5,383
,,      1896 ...	..	...	5,638
Deaths registered in the District			113
Corrections	...	...	— 26 + 0

		1896.		Mean of 6 years 1890-5.
Corrected Death-rate	...	15·4	...	18·5
Zymotic Death-rate	...	2·6	...	1·9
Infantile Mortality	...	100·	...	125·
Birth-rate	...	24·8	...	26·5
Zymotic Case-rate	...	6·8	...	8·2

One case of Diphtheria which occurred was attributed to the unloading of a cargo of very offensive manure at the Hythe. Another case was supposed to have been infected from a cat. The animal was destroyed and a *post-mortem* made by a Veterinary Surgeon, but nothing definite was discovered. (It is to be regretted that the larynx and pharynx were not sent to Dr. Thresh's laboratory for a bacteriological examination). An outbreak of Scarlet Fever occurred in June and the temporary wooden hospital was utilized for isolation purposes. The Town Council and the Rural District Council have since decided to provide a Joint Hospital.

*Water Supply.* The works belong to a private company. The supply is very pure but hardly sufficient in quantity.

*Sewerage.* Several portions of the town still require sewerage. The subject is receiving the attention of the Council. The sewers are inadequately flushed, but automatic flushing arrangements are contemplated. Some additional ventilating shafts have been erected. Hand-flushed closets are common. The scavenging is not sufficiently systematic.

*Disinfection of Premises.* This is not performed in such a thorough and efficient manner as could be desired.

*Improvements effected.* The sewer outfall has been improved. Forty-four privies have been converted into water closets. The Inspector's report shews that 268 premises have been inspected and a number of nuisances detected and abated. Nuisances arising from pig keeping and pig slaughtering are common.

## ROMFORD.

Medical Officer of Health—A. WRIGHT, M.R.C.S.

Population, 1891 ...	...	...	8,408
,, 1896 ...	...	...	9,200
Deaths registered in the District			156
Corrections ...	...	— 41 + 0	
		1896.	Mean of 6 years 1890-5.
Corrected Death-rate	...	12·5	... 15·0
Zymotic Death-rate	...	2·0	... 1·6
Infantile Mortality ...	...	121·	... 108·
Birth-rate ...	...	35·8	... 32·5
Zymotic Case-rate ...	...	14·8	— 14·6

The Medical Officer gives the Zymotic death-rate as 1·7 apparently, omitting to take three deaths from Diarrhoea into consideration. Eighteen out of the nineteen deaths were due to Diphtheria, Typhoid and Puerperal Fevers. Diseases of such a preventible nature, he thinks, could be reduced in frequency by the action on the part of the Authority. Sixty-six cases of Diphtheria occurred, a large proportion being considered to be "undoubtedly due to the faulty condition of the water closets connected with nearly the whole of the cottage property of the town."

The requirements of the district are—

- (1) The enforced provision of water for water closets.
- (2) The provision of an isolation hospital.

"No serious attempt has been made by the Council to provide a Hospital" a joint hospital for the use of the Urban and Rural Districts is recommended.

There is no report from the Sanitary Inspector nor mention of any system of inspection.

## SAFFRON WALDEN.

Medical Officer of Health—W. ARMISTEAD, M.B.

Population, 1891 ...	...	...	6,104
,, 1896 ...	...	...	6,126
Deaths registered in the district			112
Corrections ...	...	— 28 + 0	

	1826.	Mean for 6 years 1890-5.
Corrected Death-rate	... 13·7	... 16·6
Zymotic Death-rate	... 1·9	... 1·3
Infantile Mortality	... 95·	... 103·
Birth-rate	... 22·2	... 23·4
Zymotic Case-rate	... 3·9	... 5·6

The district has been singularly free from the Zymotic diseases requiring notification, but Measles became epidemic in the spring and caused 10 deaths.

Plans have been prepared for an additional precipitation tank at the sewage works, but the matter is at present in abeyance. The extension of the sewer up the Ashdon Road and along Seward's End Road, mentioned in previous reports, has not been carried out. A water supply to Seward's End is required and some experiments are about to be made to utilize the existing supply from ponds after filtering it through "polarite."

The occupier of a farm yard was fined for keeping pigs under conditions which did not comply with the Bye-laws.

### SHOEBURYNESS.

Medical Officer of Health—E. W. WALTER, M.R.C.S.

Population, 1891	...	...	3,500
", 1896	...	...	4,042
Deaths registered in the district			43
Corrections	...	— 3 + 0	
Corrected Death-rate	...	...	9·9
Zymotic Death-rate	...	...	2·7
Infantile Mortality	...	...	106
Birth-rate	...	...	34·8
Zymotic Case-rate	...	...	15·8

Typhoid Fever has again been very prevalent, and the origin of nearly all was attributed to impure water. No case of Diphtheria was notified.

The district is somewhat flat and fairly well wooded. Most of the inhabitants are dependent upon agriculture, but the Government Works and Brickyards find employment for many.

*Water Supply.* The public works are not yet completed, meanwhile a portion of the district is supplied from the Garrison Well and the remainder from shallow wells.

*Sewerage.* A part of the district is drained into a main sewer discharging into the sea. The unconnected houses have cesspools and earth closets. The latter are emptied three times a week. The sewerage of the Cambridge estate is being proceeded with.

*Overcrowding.* The general condition of the cottages is good, but overcrowding is prevalent on account of the "scarcity of houses in comparison to the population."

*Sanitary Improvements in progress.* Important works of water supply and sewerage are in progress.

*Sanitary Requirements* Besides those mentioned as in progress an Isolation Hospital is much needed.

*Periodical Inspection.* Conducted by the Medical Officer of Health and Inspector. The report of the latter shews that 72 nuisances were discovered and that all were abated.

## SOUTHEND.

Medical Officer of Health--A. C. WATERS, M.B.

Population, 1891 ...	...	...	12,333
,, 1896 ..	...	...	17,529
Deaths registered in the District			295
Corrections ...	...	— 25 + 6	
		1896.	Mean of five years 1890-2-3 4-5.
Corrected Death-rate	...	15·7	15·1
Zymotic Death-rate...	...	2·9	2·3
Infantile Mortality ...	...	147·	135·
Birth-rate ...	...	27·0	25·2
Zymotic Case-rate ...	...	15·3	15·3

The excessive infantile mortality is in a great measure due to the deaths from Diarrhoea which occurred in July and August. There were also many premature births resulting in 17 deaths. Diarrhoea and Measles, which were prevalent in the Spring are chiefly responsible for the high Zymotic mortality. Two cases of Small-pox occurred. A very mild type of Scarlet Fever was somewhat widely prevalent, the disease being introduced by visitors on eleven occasions. Eighty-six cases of Typhoid Fever originated in the Borough in 71 houses, and as a rule these occurred in the smaller houses and in the poorer parts of the town. A medical inspector of the Local Government Board reported in July (1896) on the conditions maintaining Enteric Fever in the town. He confirms reports previously made by the Medical Officer of Health regarding the endemic prevalence and seasonal development as being most likely due to the befoulement of the superficial soil by defects in drains, sewers, etc. Several samples of soil were examined by Dr. Bernard Dyer, and in one an organism was found undistinguishable from the Typhoid bacillus.

The report treats of every subject of importance from a sanitary point of view. Systematic inspection is carried out. Slaughter-houses, dairies and milk-shops, bake-houses, laying house drains, common passages, etc., are referred to. As an example of the house-to-house inspection results, the following is quoted. The houses were all in one street.

No. of house drains tested	...	...	100
" " found smoke tight	...	25	
" " leaking slightly	...	47	
" " leaking badly	...	28	

From under one house six cartloads of polluted soil were removed.

Southend, "says Dr. Waters" has suffered much in the past from defective and leaky house drains, and notwithstanding the improvements effected by the existing Bye-laws, I am of opinion that there is further room for improvement, as defective drains are at times discovered in comparatively new buildings." An alteration in the Bye-laws rendering them more stringent has been made and only awaits the sanction of the Local Government Board. The drainage of Prittlewell requires further attention.

*The Borough Sewerage system.* The present system is admitted to be seriously defective, but a very comprehensive scheme is now being carried out which when completed should remedy most of the present defects and be of immense advantage to the town. Details of this scheme together with a plan shewing many of the details accompany the report.

*The Borough Sanatorium.* The two additional blocks, administrative block and laundry were completed in March, and a laboratory and discharging rooms are being provided. 115 cases were admitted during the year. The steam disinfecter has been largely used. The Small-pox hospital was utilised for three patients. It has since been removed, but proper accommodation will soon be provided. The report by Dr. Bruce Low is referred to. His recommendations were as under:—

1. Cleansing, ventilation and gradients of sewers requiring more careful supervision.
2. A refuse destructor required.
4. Greater attention to house drainage.
5. Improved drainage to Pier Pavilion.
6. Prevention of overcrowding of Lodging-houses.
7. More public conveniences.

The Medical Officer of Health promises a special report on the overcrowding, and the drainage of the Pier Pavilion will soon be effected. The removal of house refuse is being facilitated by compelling the provision of proper moveable receptacles, and a destructor is to be provided. Bye-laws are being prepared to prevent the nuisances which arise from the removal through the streets at all hours of the day of manure and refuse matters from mews, etc. Dr. Bulstrode's report on Oyster culture has caused further steps to be taken to prevent the storage of oysters on the foreshore.

The parish of Southchurch has been incorporated within the Borough.

*Improvements commenced during 1896.*

1. Eastern Valley Sewerage Scheme. (Will be in operation June, 1897).
2. House-to-house inspection.

3. Making-up of common or back passages (under Private Streets Works Act).
4. Lavatory accommodation for both sexes.
5. Public Baths.
6. Discharging room and Laboratory at the Sanatorium.
7. Borough Cemetery. (Sanction of Local Government Board and Home Office obtained).

*Improvements to be commenced.*

1. Western Valley Sewerage scheme.
2. Erection of a Small-pox hospital.
3. Erection of a Destructor.
4. Additional lavatory accommodation for both sexes.

*Improvements still to be considered.*

1. Public Abattoir.
2. Public control of Water supply.
3. Drainage of Prittlewell.

## WALTHAM HOLY CROSS.

Medical Officer of Health—J. D. PRIEST, M.R.C.S., D.P.H.

Population, 1891 ...	...	...	6,066
,, 1896 ...	...	...	6,550
Deaths registered in the district			67
Corrections ...	...	— 1 + 4	
			Mean of 6 years 1890-5.
Corrected Death-rate ...	10·7	...	15·0
Zymotic Death-rate ...	.6	...	2·4
Infantile Mortality ...	122·	...	127·
Birth-rate ...	26·2	...	28·9
Zymotic Case-rate ...	1·6	...	8·9

"The death-rate is distinctly lower than usual, and the death-rate due to defective sanitation and other preventable causes is much under the average." Only 11 cases of Infectious Disease were notified during the whole year, and of these six were Erysipelas.

*Water Supply.* This is derived from a deep well in Lea Road belonging to the East London Water Works Company. The quality is said to be satisfactory, and in the mains it is under a pressure of from 130 to 143 lbs. per square inch. 3,010 yards of mains have been laid, but as yet only 497 out of a total of 1,256 houses are supplied by the Company, the remaining houses either being without water or supplied from questionable sources.

*Sewerage.* The scheme for seweraging Lea Road, and for laying a large main down High Street is awaiting the approval of the Local Government Board. "Everything possible should be done to expedite this project." The sewage farm does not appear to be working quite satisfactorily, and the Medical Officer of Health points out that the duty of the Council is "to produce a standard effluent, and that letting the farm for the purpose cropping, as a commercial enterprise is subservient to the main issue." The sewers not being modern require constant flushing and attention to keep them in clear.

*Housing of the Working Classes.* At length the erection of cottage property has commenced, 53 having been completed during the year. The demand, however, is still far from being met since as many as 16 applications have been received for a single cottage. To carry out an improvement in High Bridge Street, 10 plots of land on the East Brook Estate have been provisionally purchased, whereon to build dwellings for the persons displaced from the condemned area. The building plans are awaiting the sanction of the Local Government Board.

*Scavenging.* Many houses are without proper receptacles for refuse, and the scavenging is most unsatisfactory. "There is no hesitation in avering that the streets of Waltham Abbey are habitually in a filthy condition."

*Bye-laws.* These have been revised, but have not as yet received official sanction.

During the year "nothing of magnitude in a hygienic point of view has been successfully undertaken."

The Inspector's report shows that only 98 cottages have been inspected and 59 nuisances abated. Water certificates are said to have been applied for in regard to 38 new houses, yet none were granted and none refused.

*Sanitary Requirements.* An Isolation Hospital. The Medical Officer of Health regards with favour an arrangement with West Ham for sending Small-pox cases to the new hospital to be erected at Dagenham, and a combination of districts with the object of providing suitable accommodation for other diseases. Other requirements are referred to in the foregoing paragraphs.

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## WALTHAMSTOW.

Medical Officer of Health—St. C. B. SHADWELL,  
M.D., D.P.H.

Population, 1891 ...	...	...	46,346
,,      1896 ...	...	...	65,000
Deaths registered in the District			772
Corrections     ...	...	— 0 + 45	
		1896.	Mean of 6 years 1890-5.
Corrected Death-rate	...	12·5	... 15·4
Zymotic Death-rate...	...	2·4	... 2·8
Infantile Mortality ...	...	128·	... 138·
Birth-rate     ...	...	32·3	... 34·2
Zymotic Case-rate ...	...	11·8	... 12·0

The infectious sickness rate shews no tendency to decrease pointing “to the great need the district has of a hospital for the isolation of early cases.” Three cases of Small-pox were notified, but upon further observation the diagnoses proved in each instance to be incorrect. Scarlet Fever was more prevalent than in 1895. Diphtheria though not quite so prevalent the mortality rate was higher, the disease being more virulent in character. A sudden outbreak of Typhoid Fever occurred in January, nearly all the patients being children under 14 years of age. The Medical Officer of Health gives reasons for believing “that the outbreak . . . . . was due to some temporary contamination of the water supply.” In June there was a rerudescence of the disease and samples of the water were submitted to examination, the result proving that the filtration was unsatisfactory. (*Vide Water supply*). Notices were posted throughout the town recommending the

boiling of all water used for dietetic purposes. The mortality from Infantile Diarrhoea was again high. Measles has a tendency to become epidemic every third year and such an outbreak may be looked for in 1898, the last having been in 1895.

*Water Supply.* This was not only of unsatisfactory quality but during the summer months the quantity was very limited. There was not only not sufficient for domestic purposes, but the drains and sewers remained unflushed, thus endangering the public health. The water mains were but seldom flushed and the water delivered was often turbid.

*Sewerage System.* By the construction of new sewers the further pollution of the Brook at Higham Hill has been prevented. A chemical treatment of the sewage in place of broad irrigation has been adopted, and so far with satisfactory results.

Inspection has been systematic. Moveable receptacles for house refuse are now in general use, and the collection is made twice a week.

The Inspector's report shews that much good work has been done in his departments. Out of 1,436 dwelling houses examined works of various kinds were executed in 940. Workshops have been inspected but the list furnished by H.M. Inspector of Factories is certainly not complete.

### WANSTEAD.

Medical Officer of Health—F. ARGLES, M.R.C.P., Ed., M.R.C.S.

Population, 1891 ...	...	...	7,042	
,,      1896 ...	...	..	7,450	
Deaths registered in the district			71	
Corrections     ...	...	+ 9	— 9	
				Mean of 5 years 1891-5.
Corrected Death-rate	...	9·6	...	10·7
Zymotic Death-rate	...	1·1	...	.85
Infantile Mortality	...	97·	...	—
Birth-rate     ...	...	18·1	...	20·7
Zymotic case-rate	...	9·1	...	7·6

The populations given above do not include the residents in the Merchant Seamen's and Infant Orphan Asylums. The deaths, infectious diseases, etc., which occurred in these Asylums are also excluded. 68 cases of Zymotic diseases were notified during the year in the town itself and 33 in the Asylums. Diphtheria has been prevalent. Seven cases occurred in one house, the drainage of which was found to be defective. Only 11 cases were removed to the Isolation Hospital.

A mortuary has been provided. The ambulance has been improved.

The Hospital requires thoroughly cleansing and revarnishing. A disinfector is wanted.

The Inspector reports that all the cottages in the district have been inspected. Twenty-two nuisances were detected and all were abated.

### WITHAM.

Medical Officer of Health—W. G. GIMSON, M.D.

Population, 1891 ...	...	...	3,228	
,, 1896 ...	...	...	3,300	
Deaths registered in the district			56	
Corrections	...	... — 4 (2?) + 0		
				Mean of 6 years 1890-5.
Corrected Death-rate	...	15·7	..	13·4
Zymotic Death-rate	...	.9	...	1·2
Infantile Mortality	...	179·0	...	102·
Birth-rate	...	23·6	...	24·9
Zymotic Case-rate	...	5·1	...	3·6

The above estimates of population does not include the residents in the Metropolitan Workhouse School.

Influenza has been prevalent. Certain cases of Scarlet Fever occurred which caused considerable pecuniary loss to the parents of the children attacked, as they were not allowed to continue at work and there was no Hospital to which the children could be removed.

The provision of an Isolation Hospital has been receiving consideration. The Medical Officer of Health says, "The first necessary step is the selection of a site, and this, I am afraid, is still as far as ever undetermined, and it is my duty to urge upon you the necessity for an early decision on your part as to the mode of carrying out some plan of isolation. The fact of our having for some time been free from any serious outbreak of infectious disease, does not, although it is often suggested, afford ground for delay."

The sewage farm is being more satisfactorily managed, but if storm water were prevented entering the sewers the sewage could be more easily dealt with. The flushing and disinfecting of the sewers has been regularly carried out.

Several houses have been reported as unfit for habitation.

The drainage of the Police Station still remains defective.

## WOODFORD.

Medical Officer of Health—W. G. GROVES, M.R.C.S.

Population, 1891 ...	...	...	11,024
,, 1896 ...	...	...	13,061
Deaths registered in the District			118
Corrections	...	— 1 + 3	
		1896.	Mean of 6 years 1890-5.
Corrected Death-rate	...	10·0	12·3
Zymotic Death-rate ..	...	1·1	1·4
Infantile Mortality ...	...	114·	119·
Birth-rate ...	...	24·6	27·1
Zymotic Case-rate ...	...	9·8	8·3

There was an outbreak of Scarlet Fever in the Spring. Many were sent to the Hospital but more would have been sent had there been room. This want of accommodation was experienced 'several times in the year.' Typhoid Fever occurred in a low-lying portion of the district during the autumn and was probably due to the use of polluted well water. Upon the owner being summoned he gave an undertaking to close the wells.

The sanitary condition of that portion of the district connected with the low level sewers has been improved by the substitution of continuous for intermittent pumping, thus keeping the sewers free night and day. Improvements are being effected at the sewage works, but the absence of separate drainage for surface water, renders the present sewers inadequate during heavy rains, and enormously increases the amount of sewage which has to be treated at the works.

A smoke machine is now being used for testing the drains. The steam disinfecter has been found most useful. The ambulance has been put in thorough repair.

The Medical Officer of Health refers to the importance of a bacteriological examination of the throats of persons suspected to be suffering from Diphtheria, and to the necessity for legislation to control the action of uncertified mid-wives.

The Inspector only reports the examination of 78 cottages. More attention appears to have been given to dairies, bake-houses, slaughter-houses, etc. No less than 30 wells have been closed.

## WALTON-ON-THE-NAZE.

Medical Officer of Health—J. W. COOK, M.D.

Population, 1891	...	...	1,581
,,	1896	...	1,626
Deaths registered in the district			32
Corrections	...	— 6 + 0	
		1896.	Mean of 6 years 1890-5.
Corrected death-rate	...	16·0	...
Zymotic Death-rate	...	8·0	...
Infantile Mortality	...	28·	...
Birth-rate	...	21·5	...
Zymotic Case-rate	...	11·0	...
			4·5

The Zymotic mortality was excessively high. Out of 17 cases of Diphtheria and Croup notified during the year, no less than 12 proved fatal. At one time the disease appeared to have some connection with the School and it was closed for

a time. Twice the infection was imported by visitors. Dr. Cook refers to the desirability of providing Isolation accommodation.

The sewerage system has been improved by the addition of suitable flushing tanks and ventilators, but the higher portion of the system still requires attention, and the Eastern portion of the town is unsewered. A plan for extending the sewers is, however, under consideration. Previous heavy outlays have so burdened the district with debt that the Council feels "the difficulty of encountering the additional charge."

The Water supply has been greatly improved, the whole now being derived from the Tendring Hundred Water Company.

A house-to-house inspection has been made by the Medical Officer of Health and Inspector, and many nuisances were detected. Most of these have since been abated. The Mill pond and various ditches have been cleaned out. The removal of house refuse has been improved, but is not yet satisfactory.

*The requirements of the District are—*

A properly equipped isolation hospital with disinfector, etc.

Improved sewerage system, including new outfall.

Provision of moveable receptacles for house refuse and more frequent collection.

Bye-laws for regulating dairies, cowsheds, etc.

## RURAL DISTRICTS.

### BELCHAMP.

Medical Officer of Health—J. S. HOLDEN, M.D.

Population, 1891	...	...	...	5,722
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Population, 1896	...	...	...	5,722
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Deaths registered in the district	...			85
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Corrections	...	...	+	7	—	0
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	1896.		Mean for 6 years 1890-5.
Corrected Death-rate	... 16·0	... 15·4	
Zymotic Death-rate	... ·7	... 1·1	
Infantile Mortality	... 194	... 103·	
Birth-rate ...	... 19·7	... 22·7	
Zymotic Case-rate ...	... 12·9	... 9·8	

The birth-rate in this district is extraordinarily low. The infantile mortality during the past two years has been very excessive. What is the explanation?

Scarlet Fever of a mild type has been prevalent throughout the year, but did not cause a single death. A policeman who had been at an Essex watering place for the August Bank Holiday contracted Typhoid fever there and died.

*Water Supplies.* In several parishes the water supply is deficient. In consequence of the communication from the County Council upon this subject last year some little improvement has been effected, but more requires doing. Some of the public supplies are not satisfactory.

*Sewerage.* A sewage ditch at Foxearth is in an offensive condition.

*Housing of the Working Classes.* Six cottages at Walter Belchamp were reported as unfit for human habitation. Four have been placed in habitable repair, and the two others are being improved. Several cases of overcrowding were abated.

*Sanitary Inspection.* 660 cottages were inspected and 50 nuisances abated.

*Isolation Hospital.* No special reference to this or other sanitary requirements.

## BRAINTREE.

Medical Officer of Health—T. CARR, M.D.

Population, 1891 ...	...	...	19,734
Population, 1896 ...	...	...	19,734
Deaths registered in the district			285
Corrections ...	...	— 13 + 0	

	1890.		Mean for 6 years 1890-5.
Corrected Death-rate	... 13·7	...	15·5
Zymotic Death-rate	... .9	...	1·0
Infantile Mortality	... 101·	...	104·
Birth-rate	... 20·5	...	23·9
Zymotic Case-rate	... 5·8	...	6·3

Epidemics of Scarlet Fever occurred in the Coggeshall and Finchingfield Sub-Districts, but the disease was so mild in character that no death ensued. Measles were very prevalent and caused six deaths. Nine Schools had to be closed on account of this epidemic. The Urban and Rural districts have combined for the purpose of providing a Joint Hospital.

The Medical Officer of Health has fitted up a small Laboratory for the examination of water supplies and the bacteriological diagnosis of Diphtheria. Eleven samples of water were examined, and in two instances where the supplies were found to be polluted fresh sources have been found.

*Inspection.* This has not been so extensive as usual, on account of a change in Inspectors, but more attention has been given to water supplies.

*Water Supplies to the various Parishes.*

*Sewerage of various Parishes.*

*Seavenging of various Parishes.*

*Sanitary requirements of the district.*

## BILLERICAY.

Medical Officer of Health—T. CARTER, M.D.

Population, 1891 ..	...	...	20,564
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Includes the population of  
Asylum, Schools, etc.

Deaths registered in the District	435
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Corrections, deaths in Asylum, etc.	185
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	1896.		Mean for 6 years 1890-5.
Corrected Death-rate	... 14·5	... 15·9	
Zymotic Death-rate	... 1·3	... 1·2	
Infantile Mortality	... 89·	... 100·	
Birth-rate ...	... 27·3	... 28·1	
Zymotic Case-rate ...	... 7·6	... 7·3	

In preparing the mortality statistics the population of the Asylum and Metropolitan Schools, and the deaths therein have not been included. There has been no epidemic during the year, though Scarlet Fever cropped up from time to time in different parishes. Whenever possible, patients are promptly removed to hospital. 57 cases of Scarlet Fever occurred in the Hackney School, but these were moved to the Homerton Hospital. Several cases of Typhoid Fever were traced to poisoning by sewer gas, and a case of Puerperal Fever occurred in a grossly insanitary cottage.

*Water Supply.* The well at Wickford has been deepened, and now yields 3000 gallons of water per day, against 820 previously. The Chelmsford District Council are extending their mains to the boundary of Wickford parish and when this is done "it would be an easy matter—and not costly—to, at any time, carry it on to Wickford. Slyce Gate and South Green contain 53 houses, and chiefly derive their water from 'the nearest ditch.' A well was sunk at Kennel Lane, but nothing has been done "towards taking the water to the cottages requiring it." Laindon and Basildon are both badly off for water, where a considerable number of houses have been built during the last few years. The town of Billericay requires both a water supply and a system of sewerage.

*Sewerage.* The sewerage of Shenfield and Hutton has been considered and plans prepared, but the great expense and difficulty experienced in obtaining the necessary land for disposing of the sewage is causing delay. The water-course into which the sewers at present discharge, is likely to become a serious nuisance.

*Sanitary Requirements.* The chief are indicated above "No works of any extent have been undertaken by the Authority this year, and none are at present in contemplation. The

water supply to Basildon, Vange, Pitsea and Wickford, where building has or is about to take place, will have to be seriously considered before long."

*Systematic Inspection.*

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BUMPSTEAD.

Medical Officer of Health — W. ARMISTEAD, M.B.

Population, 1891	...	...	2,886	
Population, 1896	...	...	2,886	
Deaths registered in the District	...		30	
Corrections	...	— 1	+ 5	
	1896.		Mean for 6 years 1890-5.	
Corrected Death-rate	...	11·7	...	15·5
Zymotic Death-rate	...	·7	...	1·6
Infantile Mortality	..	32·	...	132·
Birth-rate	...	21·4	...	27·0
Zymotic Case-rate	...	7·9	...	13·9

There was no epidemic during the year. Out of 23 cases of Infectious Disease notified, no less than 11 were of Erysipelas.

*Water Supplies.* The new well at Helions Bumpstead has been deepened and the supply of water increased. This well rapidly fills with carbonic acid gas and two men were suffocated in it during its construction. Great difficulty was experienced in keeping it sufficiently free to enable the workmen to deepen it, and in order to obviate difficulties which would arise in keeping the pump in repair, a cast-iron windlass with steel wire rope has been substituted.

*Housing of the Working Classes.* No houses have been condemned during the year.

*Sanitary Requirements.* The conference with the County Medical Officer of Health is referred to, and steps are being taken to form with the Clare Rural District a Joint Hospital District.

*Inspection.* A number of nuisances were detected in most of the parishes, and their abatement secured.

## CHELMSFORD.

Medical Officer of Health—J. C. THRESH, M.D., D.S.C., D.P.H.

Population, 1891 ..	...	...	23,174
Population, 1896 ...	...	...	23,400
Death registered in the District			285
Corrections .....	...	+ 20	- 2
		1896.	Mean for 6 years 1890-5.
Corrected Death-rate .....	13·0	...	15·1
Zymotic Death-rate .....	1·5	...	1·4
Infantile Mortality .....	88·	...	90·6
Birth-rate .....	24·4	...	25·3
Zymotic Case-rate .....	4·4	...	6·7

No epidemic occurred during the year, but there were limited outbreaks of Measles and Whooping Cough in three parishes. Since the Isolation Hospital was established, the number of cases of Infectious Diseases notified has fallen to half the previous average. Detailed accounts are given of various localized outbreaks of Diphtheria, Typhoid Fever, Scarlet Fever, etc. The peculiarities in the distribution of disease are referred to.

*Water Supplies.* A scheme has been adopted for increasing the supply to the village of Ingatestone, the estimated cost being £670. Permission has been obtained from the Local Government Board to borrow £4000 to erect a pumping station at Danbury, and to extend the water mains to Little Baddow, Battles Bridge, Sandon and Runwell. The Great Baddow mains have been extended to the boundary of Chelmsford Borough. The scheme for supplying Writtle with water has been sanctioned by the Local Government Board, but the contention with reference to the area to be rated not being settled, further progress is delayed.

*Sewerage.* The main sewers in Springfield and Baddow have been extended, in consequence of new streets having been laid out, but no work of importance is chronicled. Writtle still remains unsewered, but when the rating area is settled, both the sewerage and water supply schemes for this village will be commenced.

*Scavenging.* A scavenger has been engaged to remove the house refuse weekly, in the parish of Springfield.

*Inspection.* A fair amount of work has been done. About 2,500 cottages have been visited and 250 nuisances were detected. 72 houses were placed in habitable repair. 16 houses were closed as being unfit for human habitation. 47 samples of water were submitted to the Medical Officer of Health for analysis.

*Isolation Hospital.* 37 cases were admitted during the year. The Hospital is proving of inestimable value to the district, and the Council encourage its use by remitting entirely or in part, the charges for maintenance and attendance.

*Sanitary Requirements.* The more important ones are referred to in the above paragraphs. There are still villages in which the drainage and water supplies could be improved.

## DUNMOW.

Medical Officer of Health—R. RICHMOND, M.B.

Population	...	...	...	16,674
Deaths registered in the District				271
Corrections	—None.			

	1896.		Mean of 6 years 1890-5.
Corrected Death-rate	16·25	...	16·5
Zymotic Death-rate	1·3	...	.9
Infantile Mortality	78·8	...	87·0
Birth-rate	21·5	...	25·3
Zymotic Case-rate	5·4	...	6·1

The only epidemic of Diphtheria occurred in Great Easton and Tilty amongst children attending Great Easton School. A child residing in a house where the privy was under a shed and the cesspit kept warm by proximity to an adjoining bakehouse, was attacked by Diphtheria and returned to school whilst in an infectious condition. Thirteen other children were attacked, and the school had to be closed for a time. During the holiday season Scarlet Fever was twice introduced into the district causing localised outbreaks.

Several cases of Typhoid Fever are attributed to the use of polluted water, and in certain other cases this was suspected to be the cause. Two cases of Typhus Fever occurred in a filthy cottage. Measles caused five deaths and Whooping Cough five.

*Water Supplies.* Incidentally referred to in connection with the cases of Typhoid Fever only.

*Sewerage.*

*Scavenging.*

*Isolation Hospital.* The provision of an Isolation Hospital is being anxiously considered.

*Systematic Inspection.* No mention by the Medical Officer of Health. The Inspector's report, however, shews that much good work is done in his department. 184 nuisances of various kinds were detected and the abatement thereof secured.

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## EPPING.

Medical Officer of Health—T. FOWLER, L.R.C.P.L.,  
L.R.C.S.I., D.P.H.

Population, 1891 ...	... ...	15,952	
„ 1896 ...	... ...	16,598	
Deaths registered in the District		223	
Corrections ... ..	+ 19	— 19	
			Mean of 6 years
	1896.		1890-5.
Corrected Death-rate ...	13·4	...	15·0
Zymotic Death-rate ...	1·6	...	1·6
Infantile Mortality ...	94·	...	112·
Birth-rate ... ...	24·7	...	27·0
Zymotic Case-rate ...	9·5	...	5·7

During the year a third Urban District has been carved out of this rural area. There still remains two considerable centres of population, viz., Harlow and Loughton.

In January an epidemic of Scarlet Fever occurred amongst the children attending the Epping and Theydon Garnon Schools and it became necessary to close the schools.

In October an outbreak occurred in Roydon and the schools had to be promptly closed. In November the Great Parndon Schools and in December the Theydon Bois Schools had to be closed on account of the prevalence of this disease. Altogether 115 cases occurred, but the type of disease was so mild that not one death ensued. Of 24 cases of Diphtheria notified 14 occurred in the parish of Loughton. Six of these were due to infection contracted elsewhere, and other four were in a Convalescent Home. Three cases of Typhoid Fever occurred in a house in which the drainage was defective. Another case was attributed to "oysters." The Harlow Schools had to be closed on account of the prevalence of Measles.

*Isolation Hospital.* During the year 63 cases were treated in the Hospital. Additional and improved accommodation is required, and "it is also desirable that a steam disinfecter should be provided."

*Periodic Inspections.* Several parishes have been systematically inspected, and the results embodied in special reports. The Inspector's report is very satisfactory.

*Sanitary Improvements effected.* A considerable amount of work has been done, although no work of great importance has been carried out. In Loughton the sewers have been extended, and at Upper Park the sewer has been re-laid. New flushing tanks have been fixed at Harlow.

*Water Supply.* The water mains at Harlow have been extended to some 80 additional houses.

*Housing of the Working Classes.* Insanitary, delapidated cottages abound, together with much overcrowding. The evils resulting therefrom are fairly pointed out.

#### *Further Sanitary Requirements.*

Better houses for the working classes.

Improved systems of sewerage, especially for Woburn Avenue and Theydon Green (a scheme for these districts has been decided upon).

A water supply for Rye Hill, at present dependent upon ponds.

## HALSTEAD No. 1.

Medical Officer of Health—J. H. ASHWORTH, M.D.

Population, 1891 ...	...	...	4,762
Population, 1896 ...	...	...	4,943
Deaths registered in the District			49
Corrections	...	...	+ 6 — 2
			Mean of 6 years
		1896.	1890-5.
Corrected Death-rate	...	10·7	14·7
Zymotic Death-rate	...	1·0	·6
Infantile Mortality ...	..	58·0	113·
Birth-rate ...	...	20·8	23·5
Zymotic Case-rate ...	...	1·6	4·4

The district has been singularly free from infectious disease during the year. Measles however were somewhat prevalent in the Spring, and necessitated the closing of the Earls Colne Schools.

*Sewerage.* The sewerage of Earls Colne is very defective. The District Council obtained plans for an improved system, but the local opposition caused it to be abandoned.

*Water Supply.* Some years ago, Mr. Reuben Hunt provided a tank at Earls Colne, and kept it supplied with water from his works, and this has formed the chief source from which drinking water has been derived by the inhabitants. During the year Mr. Hunt cut off the supply, and the parish has again to resort to its shallow wells.

*Inspection.* Various portions of the district have been inspected, and the Sanitary Inspector was able to secure the abatement of the nuisances detected.

## HALSTEAD No. 2.

Medical Officer of Health—J. B. BROMLEY, M.R.C.S.

Population, 1891 ...	...	...	6,048
Deaths registered in the District			83
Corrections	...	...	+ 10 — 0

		1896.		Mean of 6 years 1890-5.
Corrected Death-rate	...	15.3	...	14.5
Zymotic Death-rate	...	1.3	...	.5
Infantile Mortality	...	121.	...	89.
Birth-rate	...	24.4	...	25.3
Zymotic Case-rate	...	3.6	...	5.2

Schools had to be closed in Castle and Sible Hedingham on account of Measles. The Topperfield School was closed in March, for Mumps and in October, for Whooping Cough. An epidemic of Diphtheria in Stambourne, in February and March necessitated the closing of the school for seven weeks. A special report was presented with reference to this epidemic.

*Water Supplies.* New wells have been sunk and good water obtained at Meadow Field and New England, Sible Hedingham and at Gainsford End, Toppesfield. Samples from all the public supplies have been examined by the County Medical Officer of Health. Two were found unfit for domestic purposes and the use of water from these sources has been discontinued. Several districts are still badly supplied with water.

*Isolation Hospital.* There is a Cottage Hospital utilized for the southern portion of the district; another is required for Ridgewell, Stambourne, Tilbury and Toppesfield.

*Inspection, Results of.* Four cottages were found unfit for human habitation. Two of these have been closed (one by order of Magistrates) and two placed in repair. Several cases of overcrowding were abated. Stambourne was carefully inspected, on account of the Diphtheria outbreak.

*Further Sanitary Requirements.* Besides those indicated above, Bye-laws are required with respect to the removal of refuse, etc., and the proper keeping of animals.

### LEXDEN & WINSTREE.

Medical Officer of Health—J. W. COOK, M.D.

Population, 1891	...	...	21,566
Population, 1896	...	...	23,070
Deaths registered in the District			305
Corrections	...	...	+ 0 — 0

	1896.		Mean of 6 years 1890-5.
Corrected Death-rate	... 13·2	...	14·9
Zymotic Death-rate	... .9	...	1·5
Infantile Mortality	... 72·	...	105·
Birth-rate ...	... 25·6	...	25·6
Zymotic Case-rate	... 4·2	...	8·0

There has been no serious outbreak of Infectious Disease during the year.

*Isolation Hospital.* The portable tent hospital was erected at Mount Bures on account of an outbreak of Scarlet Fever. After the patients were moved therein no further cases occurred.

*Drainage and Water Supply.* The Colchester water mains extend into Stanway, but a further extension is desirable to supply certain houses at present without a supply. Works of drainage and water supply are required for the parishes of Wivenhoe, Rowhedge, Dedham, and West Mersea. These have been reported before, but as yet nothing appears to have been done. "Costly works would not be necessary, and I feel sure the benefits would be great, not only in a sanitary point of view, but financially." In certain other portions of the district the people are dependent upon pond water.

*Housing of the Working Classes.* Various houses have been represented as unfit for human habitation, but cottage accommodation is much needed. This want of houses has the effect of causing overcrowding.

*Bye-Laws.* Certain districts should have Urban powers, and general bye-laws are required for the whole district.

*General Inspection.* The list of premises inspected and nuisances abated is furnished in the Inspector's summary.

## MALDON.

Medical Officer of Health—J. C. THRESH, M.D., D.Sc., D.P.H.

Population, 1891	...	...	18,099
Population, 1896	...	...	18,200
Deaths registered in the District			212
Corrections	...	+ 19	— 0

			Mean of 6 years
	1896.	1890-5.	
Corrected Death-rate	... 14·3	... 15·8	
Zymotic Death-rate	... 1·1	... 1·5	
Infantile Mortality	... 110	... 102	
Birth-rate	... ... 27·4	... 27·6	
Zymotic Case-rate	... ... 3·8	... 7·0	

No serious outbreak of infectious disease occurred during the year. An account is given of a series of cases of illness amongst very young children at Goldhanger, which caused four deaths within a week. The disease appeared to be a form of Croup. In Burnham a series of cases of Malarial Fever occurred, some with marked Typhoid symptoms. For many years these cases have been very rare, though a few generations ago they were exceedingly common.

*General Sanitary Conditions.* Burnham has a public water supply and a sewerage system, but the house drains generally are not satisfactory. The supply of water is not sufficient to meet all requirements. The Southminster public water supply has proved a great boon. More water is being used than had been anticipated. There are many insanitary conditions in the village. Certain parishes on the London clay are inadequately supplied with water.

*Sanitary Improvements effected.* A bored well at Steeple has been purchased, deepened, and placed in good repair. For this purpose the Local Government Board sanctioned a loan of £160. The public wells at Stow Maries, Purleigh, and Fambridge have been deepened or otherwise improved, so as to yield more abundant supplies and ensure protection from pollution. Two new wells have been sunk in the village of Tillingham, one at each end, and the supply of water considerably improved. The Tillingham sewage garden has been re-drained. The sewage tanks at Burnham have been rearranged, and the treatment of the sewage with alumino-ferric adopted. The sewerage scheme at Tolleshunt D'Arcy has been completed and all the houses connected therewith. The old privies in Southminster are being converted into pail closets and a public scavenger has been appointed.

*Sanitary Improvements in progress or contemplated.* An Isolation Hospital has been decided upon for the Southern half

of the district and the site acquired. For the Northern half a hospital will probably be provided for the joint use of the Urban, Port and Rural Districts. The water supply to Burnham is to be augmented by driving a series of tube wells and connecting them with the present rising main. The sewers also are about to be extended. An old disused well at Cold Norton has been re-opened, and is to be re-constructed. The sewer outfall at Tollesbury is to be improved and the sewers extended.

*Further Sanitary Requirements.* The chief ones are referred to above. The inspection of the district has not been sufficiently systematic, but by a recent resolution of the Council the Inspectors have been required to report upon certain parishes each month, so that every parish will be systematically inspected during the year. The nuisances detected are duly recorded, and the Council are determined, as far as possible, to have them abated.

### ONGAR.

Medical Officer of Health—J. C. QUENNELL, M.R.C.S., etc.

Population, 1891	..	..	10,557	
Deaths registered in the District			148	
Corrections	...	...	— 0 + 0	
				Mean of 6 years
Corrected Death-rate	..	14·0	...	15·9
Zymotic Death-rate	...	1·2	...	1·2
Infantile Mortality	.	100·	...	110·
Birth-rate	...	25·4	...	26·2
Zymotic Case-rate	..	6·6	...	7·4

An outbreak of Diphtheria occurred in Blackmore and the adjacent portion of High Ongar, and the Blackmore School was closed for a time.

*Water Supply.* The whole district appears to be supplied from shallow wells, streams, and ponds, save at Abridge, where there is a "public source." The water from the public well at Blackmore is evidently unfit for domestic purposes. The supply to Stapleford Tawney has been improved.

*Sewerage.* "There is not anywhere in the district a system of drainage, other than cesspools, many of them are open, and as a rule they discharge their overflow into ditches." The drainage of Moreton has been much improved. Earth closets have been substituted for cesspits, and the liquid sewage is filtered before being discharged into the stream.

*Housing of the Working Classes.* These as a general rule are good, but in certain parishes there are old dilapidated properties.

*Sanitary Requirements.* Chipping Ongar requires an efficient system of drainage and a water supply. Both are receiving consideration. An Infectious Hospital is required.

A special report is submitted by the Inspector and Surveyor, shewing that a portion of the district has been inspected from house-to-house, and that many nuisances have been abated.

## ORSETT.

Medical Officer of Health—REA CORBET, M.R.C.S.

Population, 1891 ...	...	...	14,378	
Population, 1896 ...	...	...	15,649	
Deaths registered in the District			205	
Corrections	...	...	+ 7	— 7
				Mean of 6 years
		1896.		1890-5.
Corrected Death-rate	...	13·1	...	15·2
Zymotic Death-rate	...	1·9	...	1·9
Infantile Mortality ...	...	122	...	119
Birth-rate	...	30·3	...	33·3
Zymotic Case-rate ...	...	13·5	..	7·2

There were epidemics of Scarlet Fever at Tilbury Docks, South Ockendon and Stanford-le-Hope. Several localized outbreaks of Diphtheria occurred during the year. At West Tilbury and Horndon-on-the-Hill the Schools had to be closed on account of the prevalence of Measles. Only eight patients were removed to the Isolation Hospital during the year.

*Water Supply.* Several parishes are supplied with water from the South Essex Company's mains. There are public wells

in many other villages. Horndon village has to be supplied by a water-butt, the water being retailed at  $\frac{1}{4}$ d. per pail. Laindon Hills has a very limited supply, but an effort has been made to keep this free from contamination.

*Sewerage.* There is a sewer running from Tilbury station to join the Grays system, and draining the houses at Tilbury Docks, and part of Chadwell St. Mary and Little Thurrock. In no other parish is there a sewerage system. Cesspits abound and ditches are polluted by sewage. The danger to the South Essex Water Company's source of supply is again referred to. At North Ockendon the pail system has been adopted, but is not satisfactory, since there is no public scavenger. The Stanford Brewery drains enter the Brook.

*Systematic Inspection.* This has been carried out in a portion of the district, 400 houses being examined. 16 were found unfit for habitation, 10 were closed, and one placed in repair.

*Improvements Required.* The drainage of Stanford-le-Hope. A Committee is considering this matter. The scavenging of West Thurrock. This also is being considered by a Committee. A sewer to connect Church Street and Gordon Road, Chadwell, to the Grays main sewer is urgently required. Public scavenging should be carried out in all the larger villages. To be ready for any emergency, should Infectious Disease be introduced into Tilbury Docks, two tent hospitals have been purchased, and an arrangement made for hiring a cottage, and land upon which to erect the tents.

## ROCHFORD.

Medical Officer of Health—R. YOUNG, M.B.

Population, 1891 ...	...	...	14,555
„ 1896 ...	...	...	15,114
Deaths registered in the District			255
Corrections	...	—	11 + 0

	1896.		Mean of 6 years 1890-5
Corrected Death-rate	.	16·1	16·1
Zymotic Death-rate	...	2·0	2·0
Infantile Mortality	...	122·	103·
Birth-rate	...	32·4	32·2
Zymotic Case-rate	...	9·3	10·7

Two cases of Small-pox occurred during the year. Out of 141 cases of infectious disease notified no less than 79 were Typhoid Fever. Sixteen cases occurred in the older portion of Leigh, 12 in Rochford and 12 in Southchurch, the remainder were spread over 12 parishes. Scarlet Fever was epidemic in Paglesham and the schools had to be closed. Of Diphtheria and Croup only 9 cases were notified, against 68 in the previous year. Measles became epidemic in Rawreth and Sutton, and the schools were closed in consequence.

*Sanitary Improvements.* Minor improvements have been effected in Barling, South Benfleet, Canewdon, Hadleigh, Hockley, Eastwood, Rochford, Southchurch, and Rayleigh. An attempt is being made to obtain a water supply for Rochford, and the trial bores made give a promise of success. Leigh has obtained an excellent water supply.

*Further Sanitary Requirements.* South Benfleet, Hull Bridge, Rochford, and groups of cottages in other parishes require an improved water supply. The present supplies being insufficient in quantity and defective in quality. The sewage of Rochford is not disposed of in a satisfactory manner. The scavenging also is not sufficiently frequent and regular. The sanitary condition of Southchurch is unsatisfactory, but as it has now been included in Southend Borough it will receive attention. A sewerage system is needed by Great Wakering. The sanitary defects of Leigh will no doubt receive the early attention of the Urban Council which will shortly be formed. An Isolation Hospital, with ambulance, etc., is required.

*Systematic Inspection.* Although only incidentally referred to, evidently each parish has been examined both by the Medical Officer of Health and Inspector. Over 500 nuisances were abated. 155 privies were converted into earth or pail closets.

## ROMFORD.

Medical Officer of Health—A. WRIGHT, M.R.C.S.

Population, 1891 ...	...	...	16,042
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„ 1896 ...	...	...	17,100
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Deaths registered in the District			225
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Corrections—None given.

	1896.		Mean of 6 years
Uncorrected Death-rate	13·1	...	14·9
Zymotic Death-rate	2·4	...	2·5
Infantile Mortality	153·	...	122·
Birth-rate	30·5	...	30·1
Zymotic Case-rate	12·1	...	10·1(4 yrs.)

The deaths in the Union Workhouse of persons belonging to this district not being added to the deaths within the district, the death-rate given above is too low and useless for comparison with other districts.

Epidemics of Scarlet Fever occurred in Collier Row, Dagenham, Hornchurch, Rainham, and Wennington. At Wennington the Scarlet Fever was associated with Diphtheria. Epidemics of Diphtheria also occurred in Dagenham and North Hornchurch, and were associated with insanitary conditions. Typhoid Fever also prevailed in North Hornchurch.

*Water Supplies.* Several parishes are supplied with water by the South Essex Company. Some portions of Collier Row are badly supplied and the same applies to portions of Havering, Romford Common, Great Warley, Rainham, and Wennington.

*Sewerage.* Many of the large villages are in a grossly insanitary condition on account of the pollution of the soil by sewage. This is especially the case in Dagenham, Rainham, and Hornchurch. The stream at Hornchurch is much polluted. A system of sewerage for the Upminster District has been decided upon.

*Inspection.* A very large number of nuisances are referred to and a list given of 551 cases in which the Inspector served notices for abatement.

*Offensive Trades.* The air at Rainham and Wennington is frequently foul. This arises from emanations from factories on the river bank (manure, eandle, and glue works), some on the Essex side, most on the Kent side of the river.

*Isolation Hospital.* None in the district. During the year "the want of an Infectious Hospital was previously felt."

*Sanitary Requirements.* "The following sanitary improvements are, in my opinion, urgently needed :—

1. A slop and subsoil drainage for the village of Dagenham.
  2. A similar system for the village of Rainham.
  3. Some system by which the village of Hornchurch would be prevented from polluting the neighbouring ditches and water courses.
  4. Arrangements for scavenging the more populous parishes.
  5. The completion of the arrangement for disposing of the sewage of that portion of Hornchurch parish continuous with the town of Romford.
  6. The provision of an Isolation Hospital."
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## SAFFRON WALDEN.

Medical Officer of Health—W. ARMISTEAD, M.B.

Population, 1891	...	...	...	12,458
", 1896	...	...	...	12,458
Deaths registered in the District				167
Correetsions	...	...	+ 24	— 2
				Mean of 6 years
		1896.		1890-5.
Correected Death rate	...	15·2	...	15·8
Zymotic Death-rate	...	2·4	...	1·1
Infantile Mortality	...	113	...	78
Birth-rate	...	23·3	...	25·8
Zymotic Case-rate	...	4·9	...	6·0

The high mortality from Zymotic diseases is due to epidemics of Measles and Whooping Cough. Small outbreaks of Scarlet Fever occurred in five parishes.

*Sanitary Improvements effected during the year.* A new well has been sunk at Hill Green, Clavering. It has a total depth of 105 ft., and complete with pump, etc., cost £100 14s. At Rickling a pump has been fixed over the old draw well. Other water supplies have been improved.

*Inspection.* No houses were reported to be unfit for human habitation. Notices were served for the abatement of 80 nuisances.

*Sanitary Requirements.* A better water supply is needed for Langley, and for the south end of Newport.

*Isolation Hospital.* This is in the Saffron Walden Urban District and used jointly. Forty-six cases of Scarlet Fever and two cases of Diphtheria were sent in during the year.

## STANSTED.

Medical Officer of Health--

Population, 1891 ... ... ...	6,481	
Deaths registered in the District	34	
		Mean of 6 years
	1896.	1890-5.
Un-corrected Death-rate ...	14·3	14·1
Zymotic Death-rate ...	1·1	1·1
Infantile Mortality ...	118	93·0
Birth-rate ... ...	22·5	25·7
Zymotic Case-rate ... ...	7·2	6·4

No report received. The late Medical Officer died in the Autumn, and his successor has only recently been appointed. (April).

## TENDRING.

Medical Officer of Health—J. W. COOK, M.D.

Population, 1891 ...	...	...	24,034
Population, 1896 ...	...	...	25,897
Deaths registered in the District			336
Corrections	...	...	— 12 + 0

			Mean of 6 years
	1896.		1890-5.
Corrected Death-rate	...	12·5	...
Zymotic Death-rate	...	·6	...
Infantile Mortality ...	...	78·	...
Birth-rate	...	26·1	...
Zymotic Case-rate ...	...	3·6	...

Brightlingsea became an Urban district in the Autumn. The population of the Rural District at that date therefore, became reduced to 20,124.

GREAT BENTLEY. Sixteen years ago the Medical Officer of Health recommended the sewerage of this village, but nothing has yet been done.

LITTLE CLACTON. A Committee met here to consider the question of draining a portion of the village, but nothing has been done.

ELMSTEAD. A plan was prepared for laying a sewer in this village, but in consequence of the local opposition nothing has been done.

FRINTON. A Parochial Committee has been formed for this parish, and a sewerage scheme has been submitted to the Local Government Board for approval, the present system being, in the highest degree, unsatisfactory. In July and August, there was a severe and fatal outbreak of Diphtheria, "which is not the first I have had to report."

MANNINGTREE. The sewer outfall here is unsatisfactory.

RAMSAY. Overcrowding is prevalent in Parkeston.

ST. OSYTH. An extension of the sewer here is greatly needed.

TENDRING. The cottages in Tendring Row have an unsatisfactory supply of water.

WEELEY. The new sewers laid down last year have been disappointing, and require altering.

*Improvements effected.* Many minor improvements are chronicled, but none of an important character.

*Improvements required.* Referred to in above paragraphs.



TABLE OF POPULATION, BIRTHS, AND OF NEW CASES OF INFECTIOUS SICKNESS, coming to the knowledge of the Medical Officers of Health, during the year 1896, in the County of Essex ; classified according to DISEASES, AGES and LOCALITIES.

TABLE OF DEATHS during the year 1896, in the URBAN and RURAL Districts of the County of Essex, classified according to  
DISEASES, AGES and LOCALITIES.



